

**PARTS
CATALOG**

FOR
Onan
ELECTRIC GENERATING PLANTS

**EC
SERIES**

50 & 60 CYCLE

ONAN

1400 73RD AVENUE N.E. • MINNEAPOLIS, MINNESOTA 55432
A DIVISION OF ONAN CORPORATION

Important Safety Precautions

Read and observe these safety precautions when using or working on electric generators, engines and related equipment. Also read and follow the literature provided with the equipment.

Proper operation and maintenance are critical to performance and safety. Electricity, fuel, exhaust, moving parts and batteries present hazards that can cause severe personal injury or death.

FUEL, ENGINE OIL, AND FUMES ARE FLAMMABLE AND TOXIC

Fire, explosion, and personal injury can result from improper practices.

- Used engine oil, and benzene and lead, found in some gasoline, have been identified by government agencies as causing cancer or reproductive toxicity. When checking, draining or adding fuel or oil, do not ingest, breathe the fumes, or contact gasoline or used oil.
- Do not fill tanks with engine running. Do not smoke around the area. Wipe up oil or fuel spills. Do not leave rags in engine compartment or on equipment. Keep this and surrounding area clean.
- Inspect fuel system before each operation and periodically while running.
- Equip fuel supply with a positive fuel shutoff.
- Do not store or transport equipment with fuel in tank.
- Keep an ABC-rated fire extinguisher available near equipment and adjacent areas for use on all types of fires except alcohol.
- Unless provided with equipment or noted otherwise in installation manual, fuel lines must be copper or steel, secured, free of leaks and separated or shielded from electrical wiring.
- Use approved, non-conductive flexible fuel hose for fuel connections. Do not use copper tubing as a flexible connection. It will work-harden and break.

EXHAUST GAS IS DEADLY

- Engine exhaust contains carbon monoxide (CO), an odorless, invisible, poisonous gas. Learn the symptoms of CO poisoning.
- Never sleep in a vessel, vehicle, or room with a genset or engine running unless the area is equipped with an operating CO detector with an audible alarm.
- Each time the engine or genset is started, or at least every day, thoroughly inspect the exhaust system. Shut down the unit and repair leaks immediately.

- Warning: Engine exhaust is known to the State of California to cause cancer, birth defects and other reproductive harm.

Make sure exhaust is properly ventilated.

- Vessel bilge must have an operating power exhaust.
- Vehicle exhaust system must extend beyond vehicle perimeter and not near windows, doors or vents.
- Do not use engine or genset cooling air to heat an area.
- Do not operate engine/genset in enclosed area without ample fresh air ventilation.
- Expel exhaust away from enclosed, sheltered, or occupied areas.
- Make sure exhaust system components are securely fastened and not warped.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not remove any guards or covers with the equipment running.
- Keep hands, clothing, hair, and jewelry away from moving parts.
- Before performing any maintenance, disconnect battery (negative [-] cable first) to prevent accidental starting.
- Make sure fasteners and joints are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.
- If adjustments must be made while equipment is running, use extreme caution around hot manifolds and moving parts, etc. Wear safety glasses and protective clothing.

BATTERY GAS IS EXPLOSIVE

- Wear safety glasses and do not smoke while servicing batteries.
- Always disconnect battery negative (-) lead first and reconnect it last. Make sure you connect battery correctly. A direct short across battery terminals can cause an explosion. Do not smoke while servicing batteries. Hydrogen gas given off during charging is explosive.
- Do not disconnect or connect battery cables if fuel vapors are present. Ventilate the area thoroughly.

DO NOT OPERATE IN FLAMMABLE AND EXPLOSIVE ENVIRONMENTS

Flammable vapor can be ignited by equipment operation or cause a diesel engine to overspeed and become difficult to stop, resulting in possible fire, explosion, severe personal injury and death. **Do not operate diesel equipment where a flammable vapor environment can be created by fuel spill, leak, etc., unless equipped with an automatic safety device to block the air intake and stop the engine.**

HOT COOLANT CAN CAUSE SEVERE PERSONAL INJURY

- Hot coolant is under pressure. Do not loosen the coolant pressure cap while the engine is hot. Let the engine cool before opening the pressure cap.

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not service control panel or engine with unit running. High voltages are present. Work that must be done while unit is running should be done only by qualified service personnel.
- Do not connect the generator set to the public utility or to any other electrical power system. Electrocution can occur at a remote site where line or equipment repairs are being made. An approved transfer switch must be used if more than one power source is connected.
- Disconnect starting battery (negative [-] cable first) before removing protective shields or touching electrical equipment. Use insulative mats placed on dry wood platforms. Do not wear jewelry, damp clothing or allow skin surface to be damp when handling electrical equipment.
- Use insulated tools. Do not tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag open switches to avoid accidental closure.
- With transfer switches, keep cabinet closed and locked. Only authorized personnel should have cabinet or operational keys. Due to serious shock hazard from high voltages within cabinet, all service and adjustments must be performed by an electrician or authorized service representative.

If the cabinet must be opened for any reason:

1. Move genset operation switch or Stop/Auto/Handcrank switch (whichever applies) to Stop.
2. Disconnect genset batteries (negative [-] lead first).
3. Remove AC power to automatic transfer switch. If instructions require otherwise, use extreme caution due to shock hazard.

MEDIUM VOLTAGE GENERATOR SETS (601V TO 15kV)

- Medium voltage acts differently than low voltage. Special equipment and training are required to work on or around medium voltage equipment. Operation and maintenance must be done only by persons trained and qualified to work on such devices. Improper use or procedures will result in severe personal injury or death.
- Do not work on energized equipment. Unauthorized personnel must not be permitted near energized equipment. Induced voltage remains even after equipment is disconnected from the power source. Plan maintenance with authorized personnel so equipment can be de-energized and safely grounded.

GENERAL SAFETY PRECAUTIONS

- Do not work on equipment when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.
- Never step on equipment (as when entering or leaving the engine compartment). It can stress and break unit components, possibly resulting in dangerous operating conditions from leaking fuel, leaking exhaust fumes, etc.
- Keep equipment and area clean. Oil, grease, dirt, or stowed gear can cause fire or damage equipment by restricting airflow.
- Equipment owners and operators are solely responsible for operating equipment safely. Contact your authorized Onan/Cummins dealer or distributor for more information.

KEEP THIS DOCUMENT NEAR EQUIPMENT FOR EASY REFERENCE.

EC SERIES

PARTS CATALOG

This Parts Catalog applies to the ONAN standard models of the EC series electric generating plants. They are powered by FORD 6 cylinder, water cooled engines.

The "right side" of the complete plant, as designated by ONAN, is determined by viewing the plant from the radiator end and results in the carburetor side. The "front" of the plant is the radiator end.

Parts are illustrated in groups and have reference numbers which correspond to the like numbers in the list for that group.

Parts illustrations are typical and should not be construed to represent a particular part number.

All part numbers are ONAN numbers except those prefixed as follows:
(AL) Electric Auto-Lite; (HOF) Hoof Products; (Z) Zenith Carburetor;
(FM) Ford.

Check each group heading in the list. Some groups do not apply to all types of plants.

When a Serial Number or Spec. Letter is referred to in a part description, compare it with the plant nameplate. Use only the numbers after the letter in the serial number.

The plant model and specification number are separated by a diagonal (/). The plant specification consists of a Number which indicates optional equipment as desired by the purchaser, and of a Letter which is advanced to coincide with production modifications by the manufacturer. This parts list includes some groups of optional equipment, such as Gas fuel, etc..

If a special or optional part is not listed, order by complete description of the part and furnish nameplate information. X-ray units are identified by a number 17 in the model and spec number.

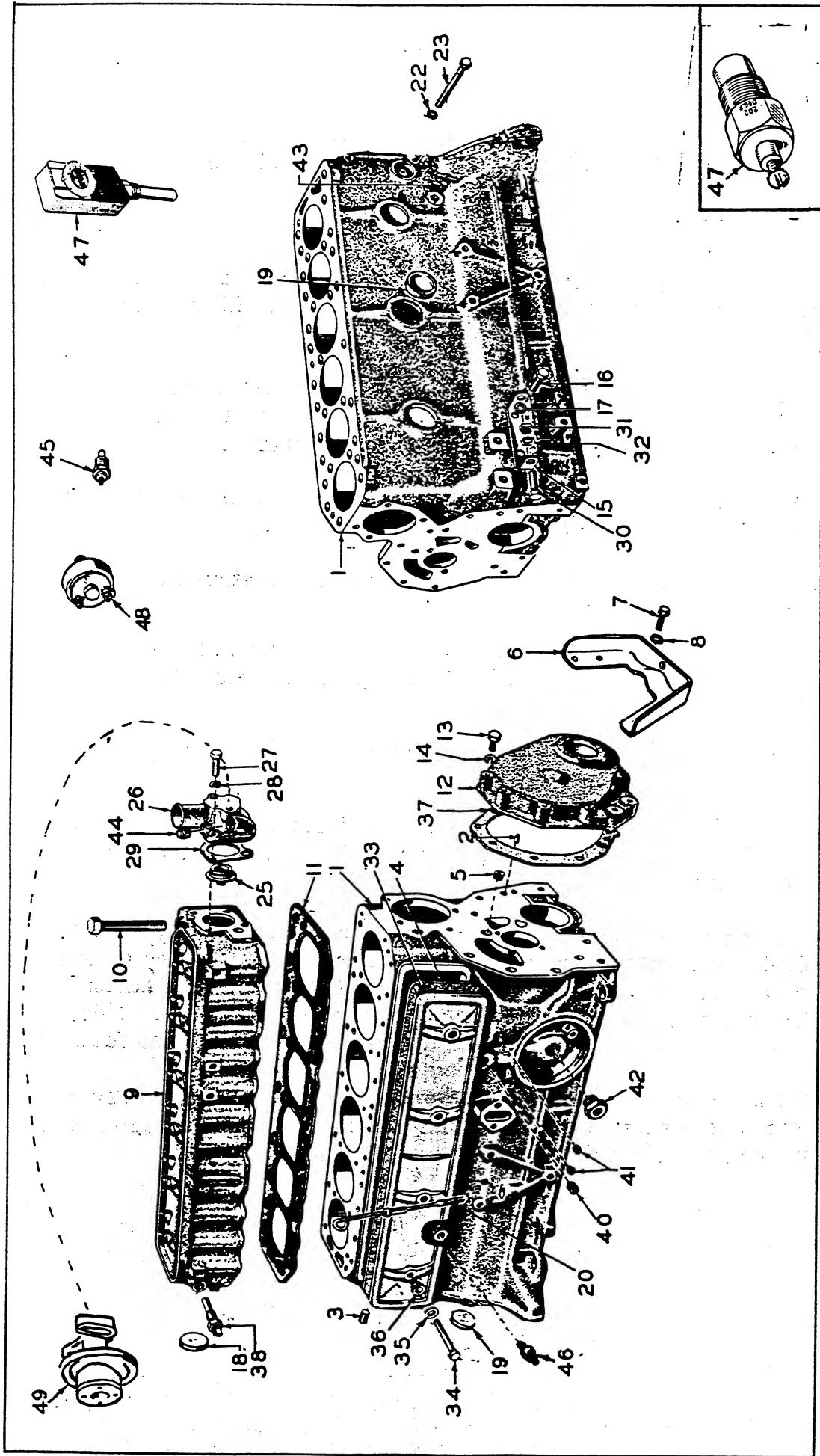


FIG. 1 - EXTERNAL VIEW, ENGINE PARTS GROUP

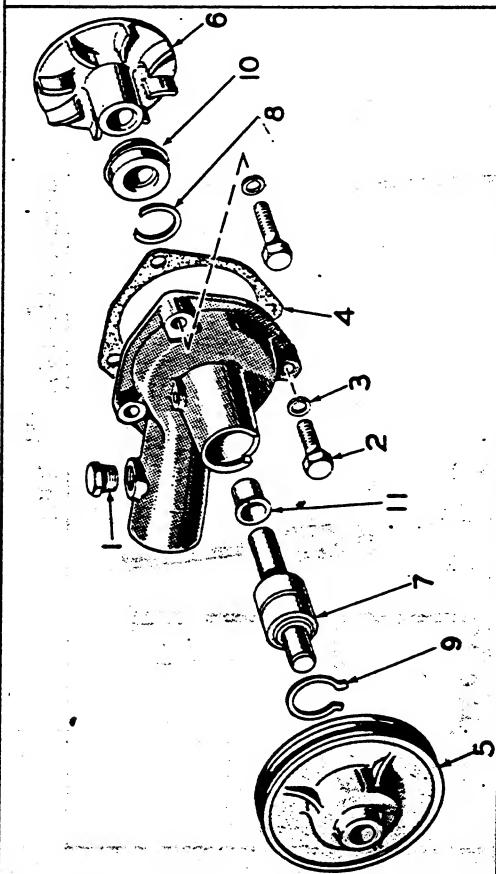


FIG. 2 - WATER PUMP PARTS GROUP

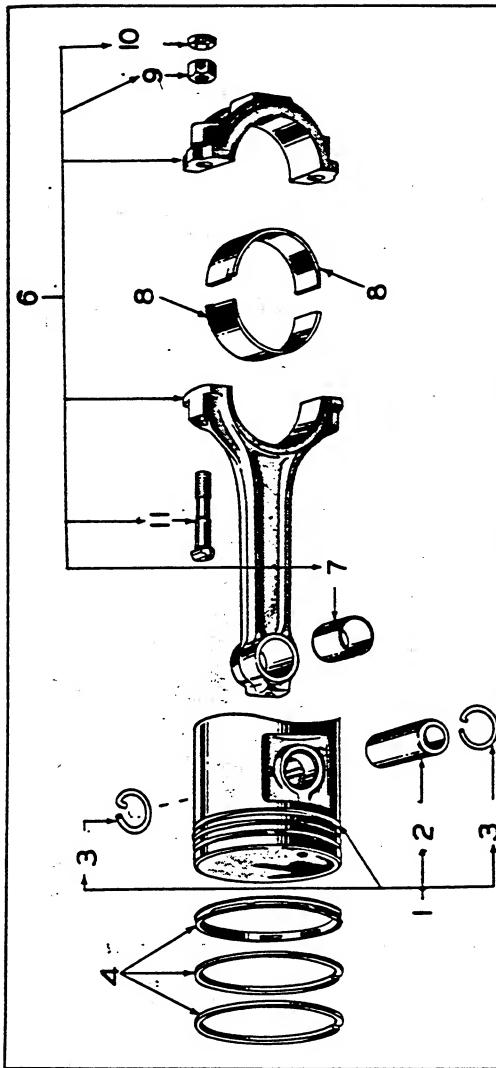


FIG. 3 - PISTON AND CONNECTING ROD GROUP

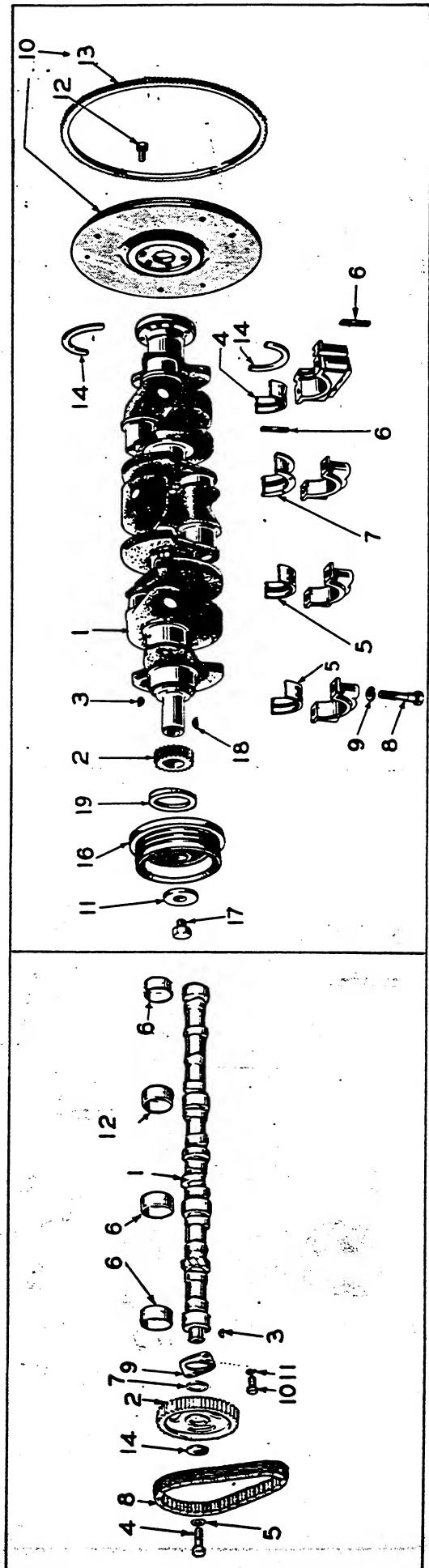


FIG. 4 - CAMSHAFT GROUP

FIG. 5 - CRANKSHAFT GROUP

FIG. 7 - OIL PUMP, OIL FILTER & RELATED PARTS GROUP

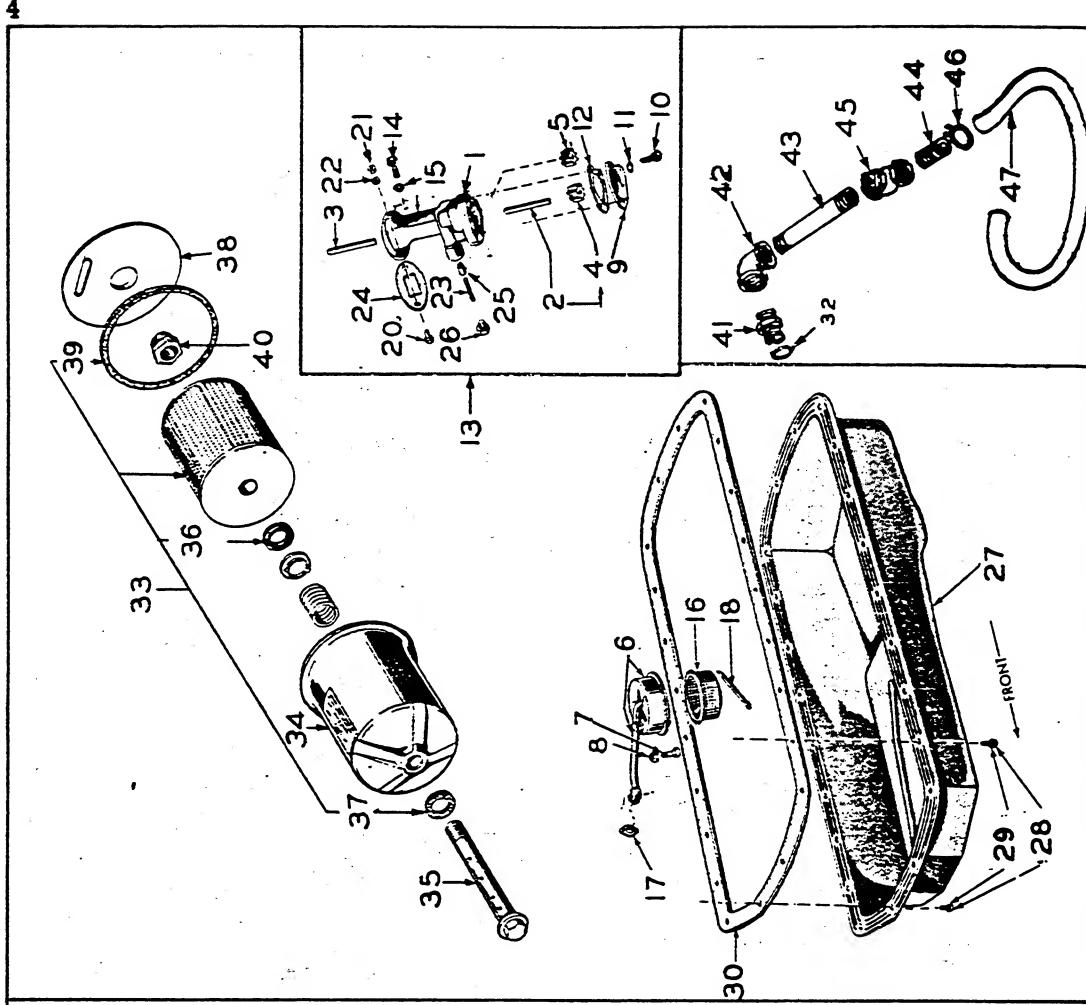


FIG. 6 - VALVE GROUP

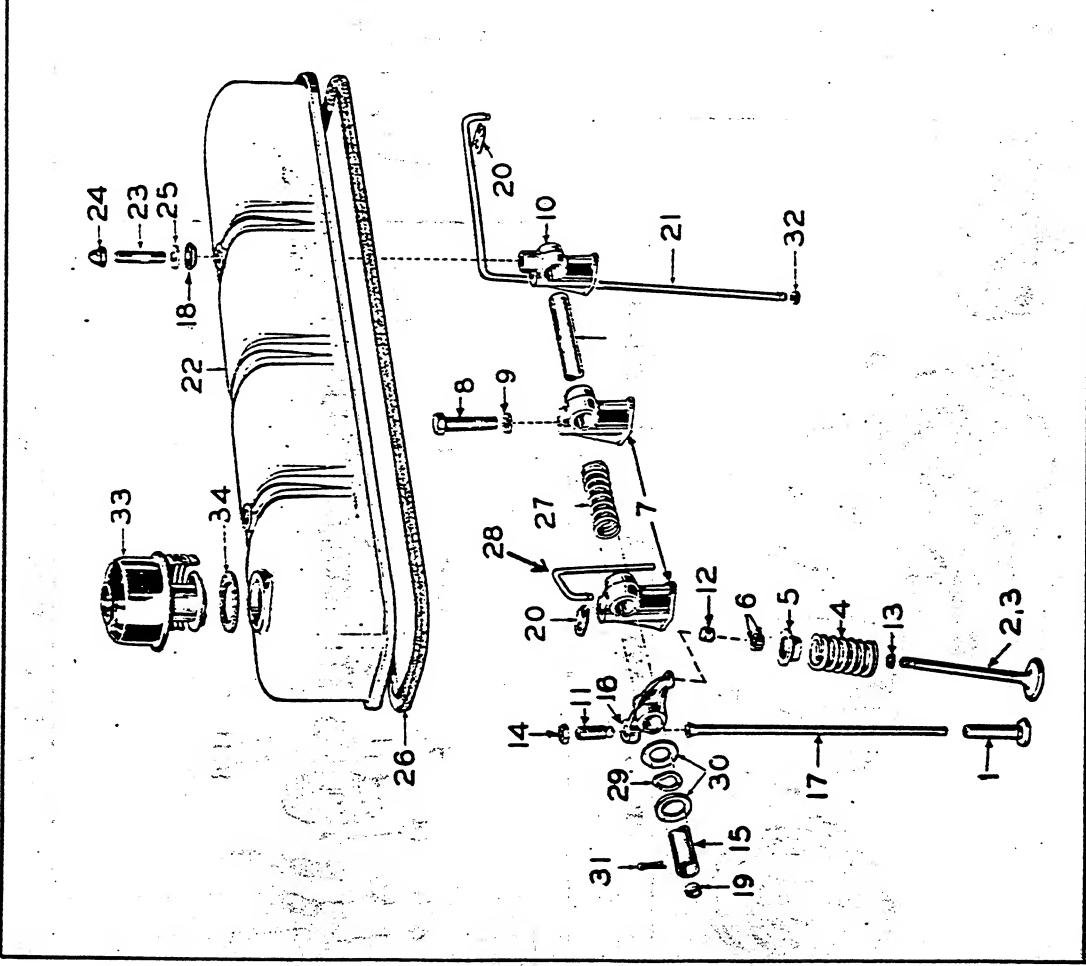


FIG. 9 - COOLING SYSTEM & MOUNTING CUSHION GROUP

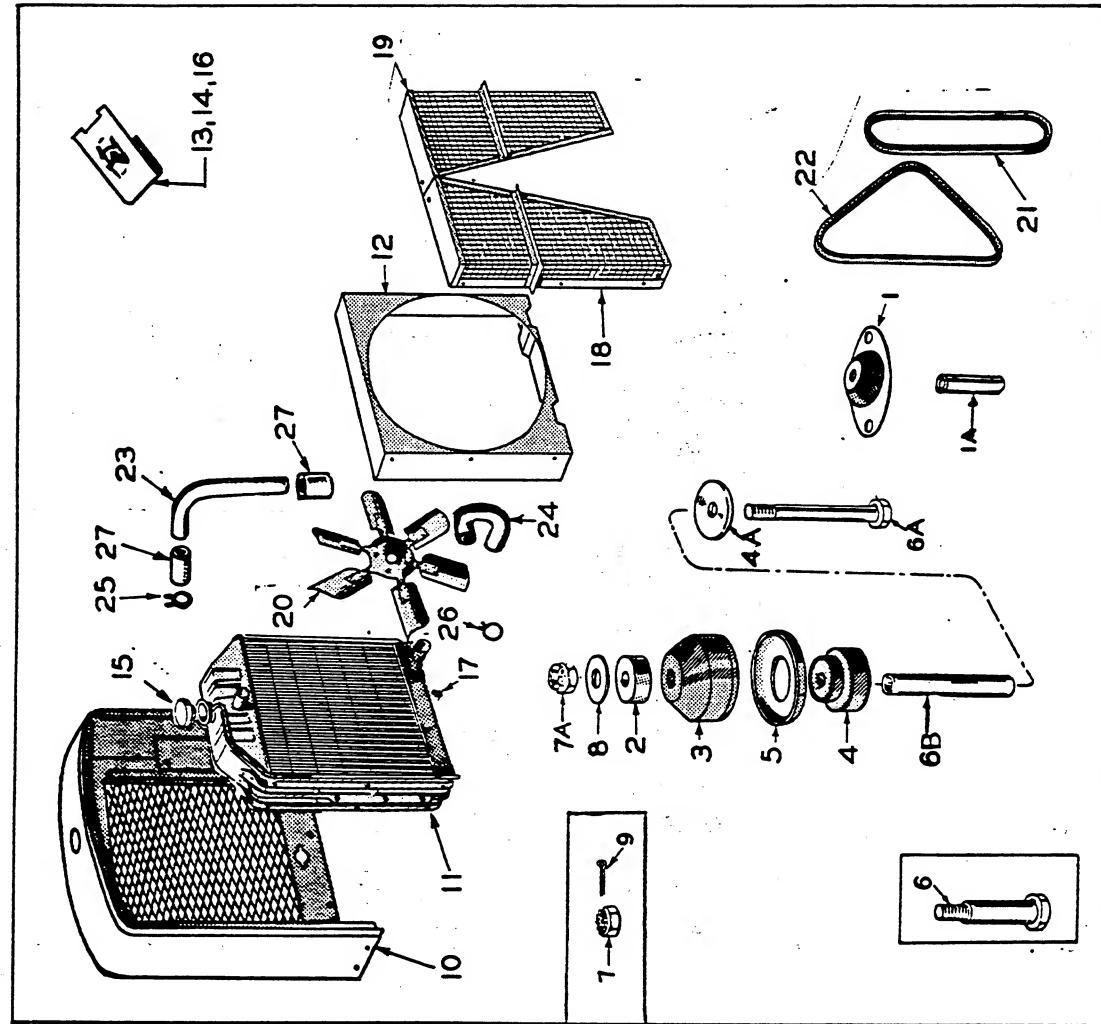
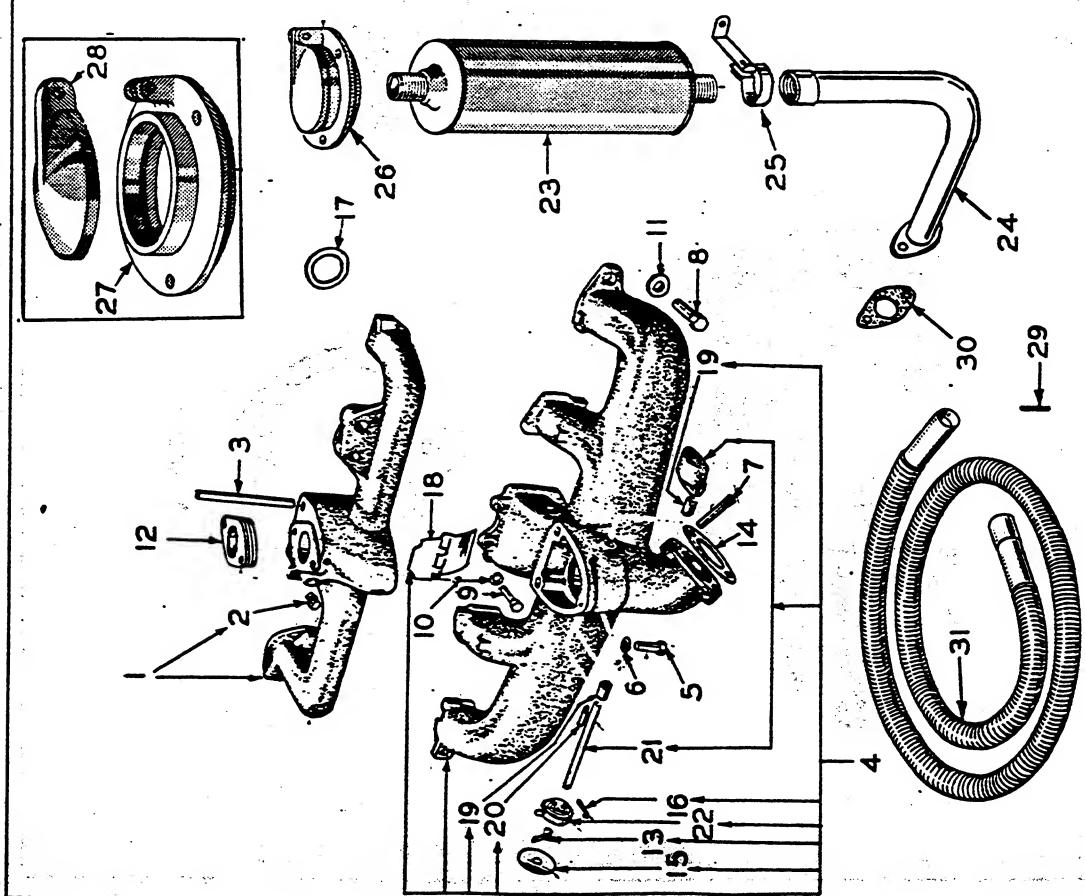


FIG. 8 - MUFFLER & MANIFOLD GROUP



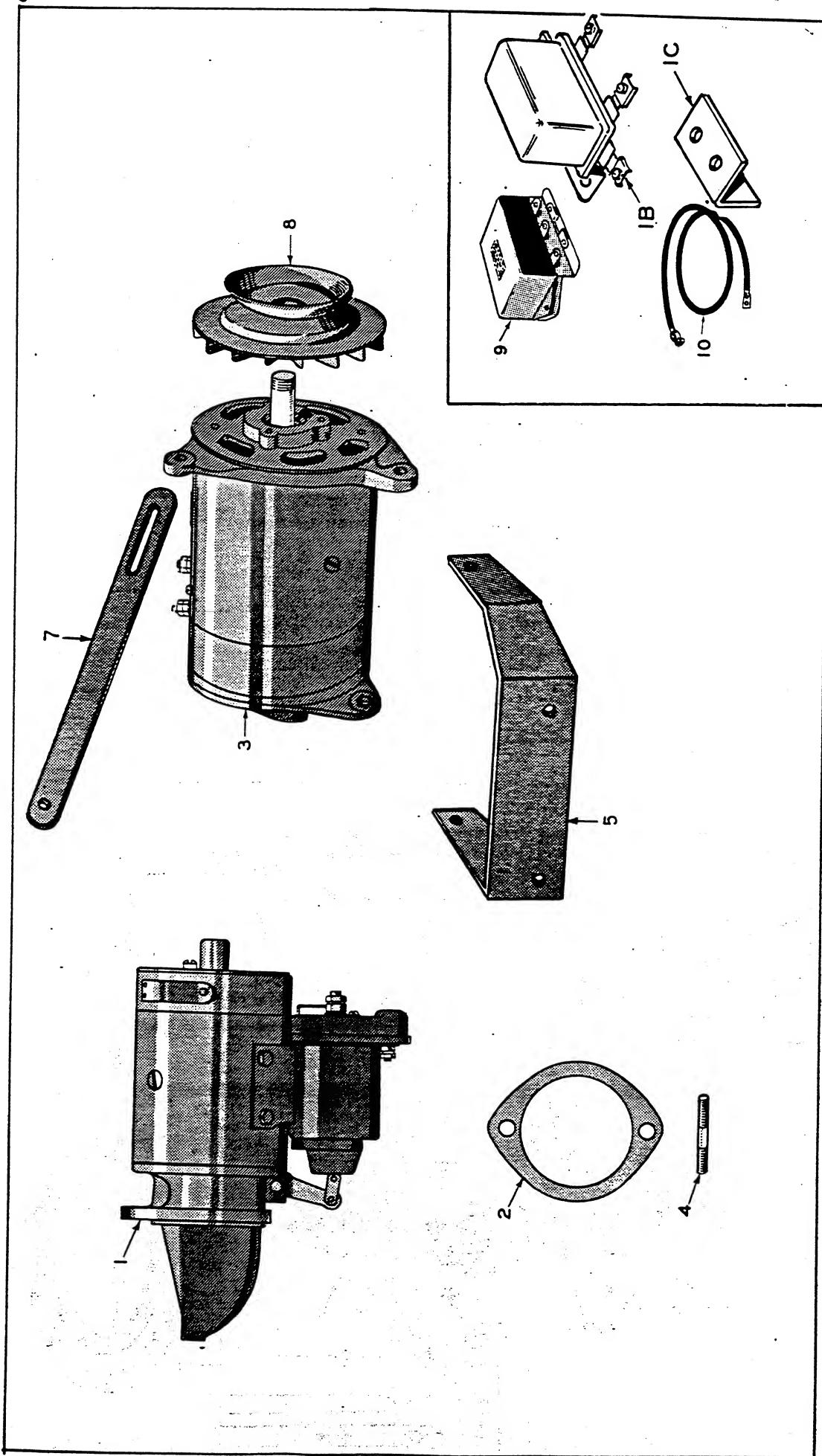
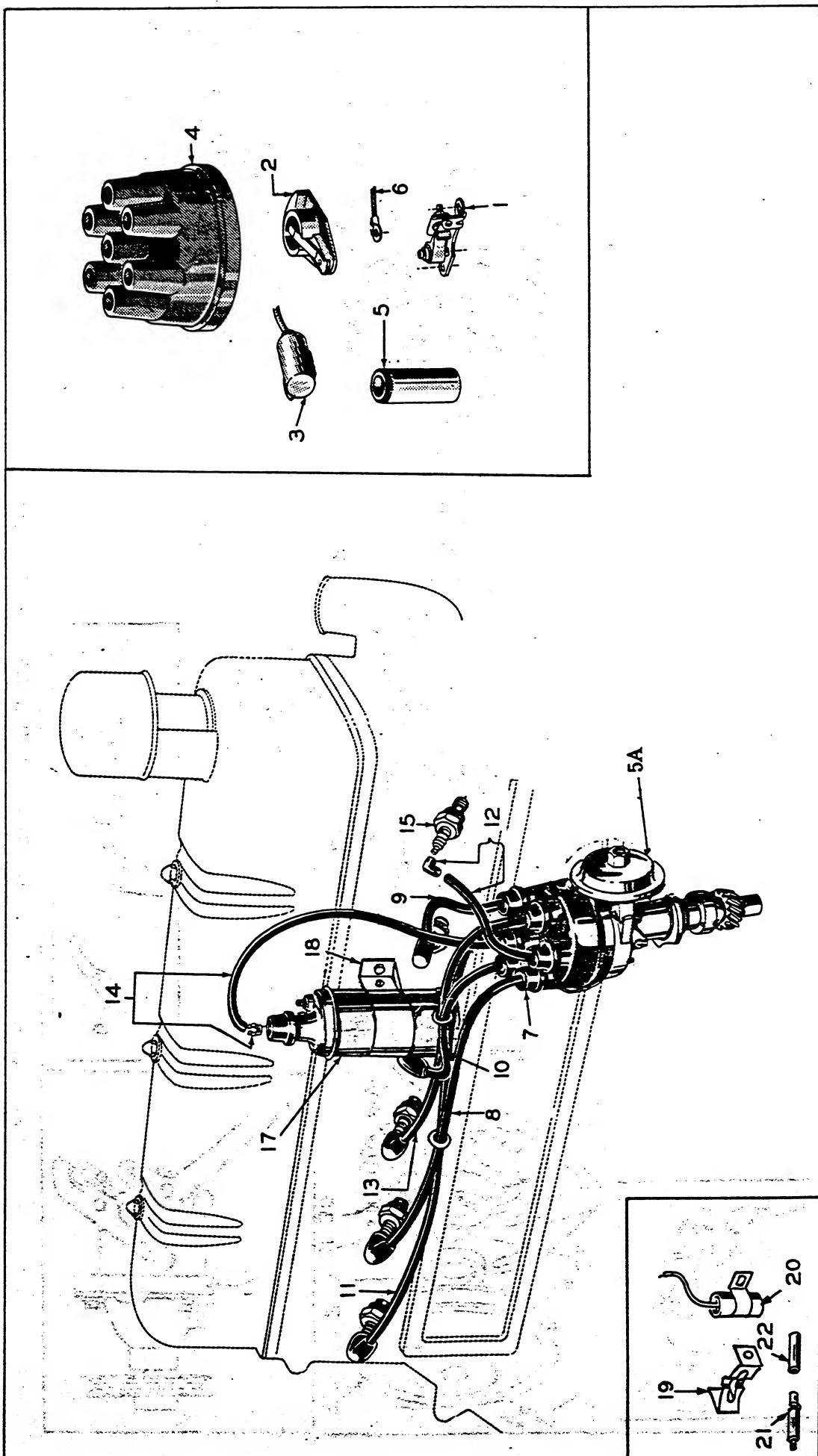


FIG. 10 - STARTING MOTOR & BATTERY CHARGING GENERATOR GROUP

FIG. 11 - IGNITION GROUP



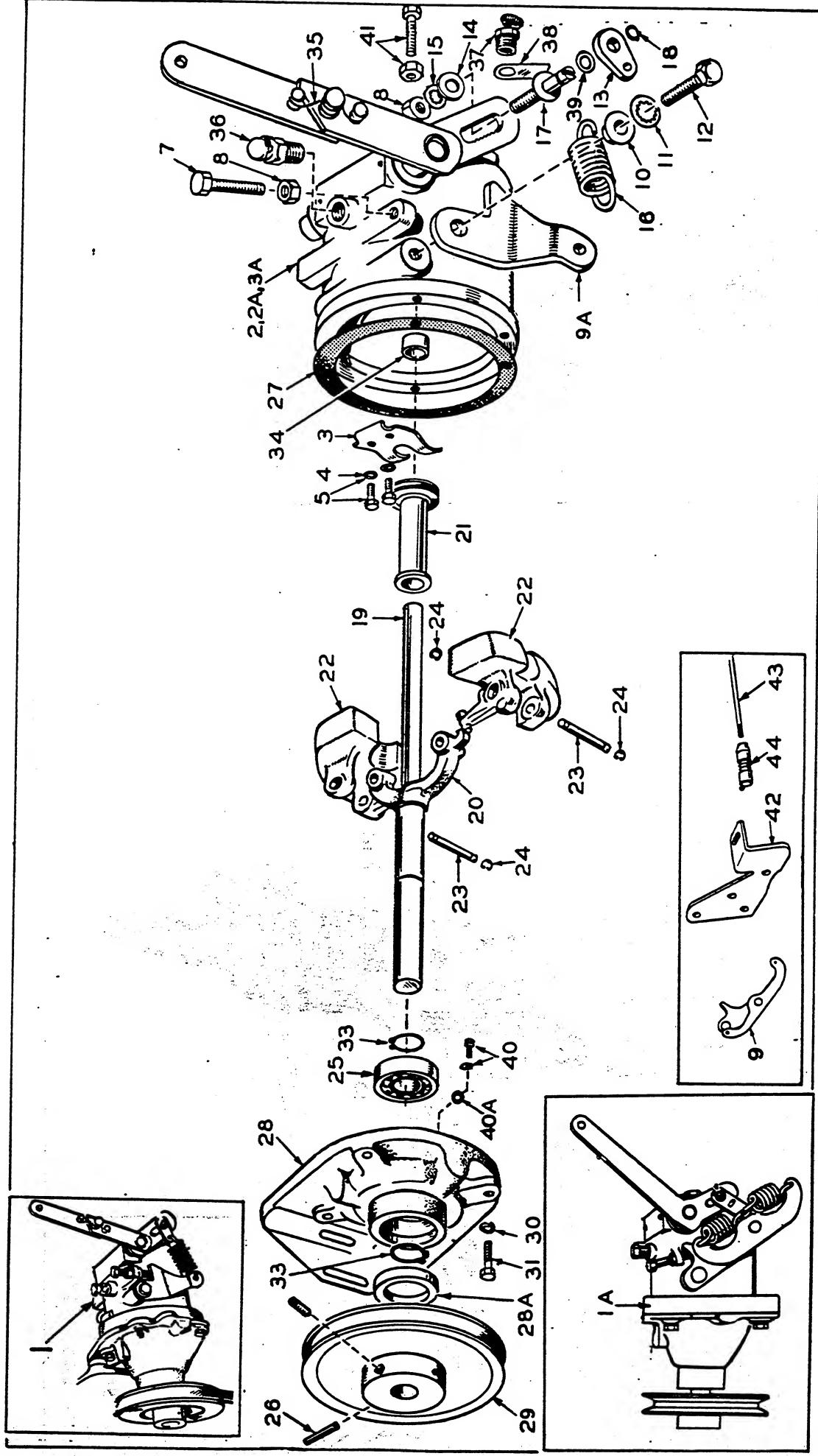


FIG. 12A - GOVERNOR PARTS GROUP

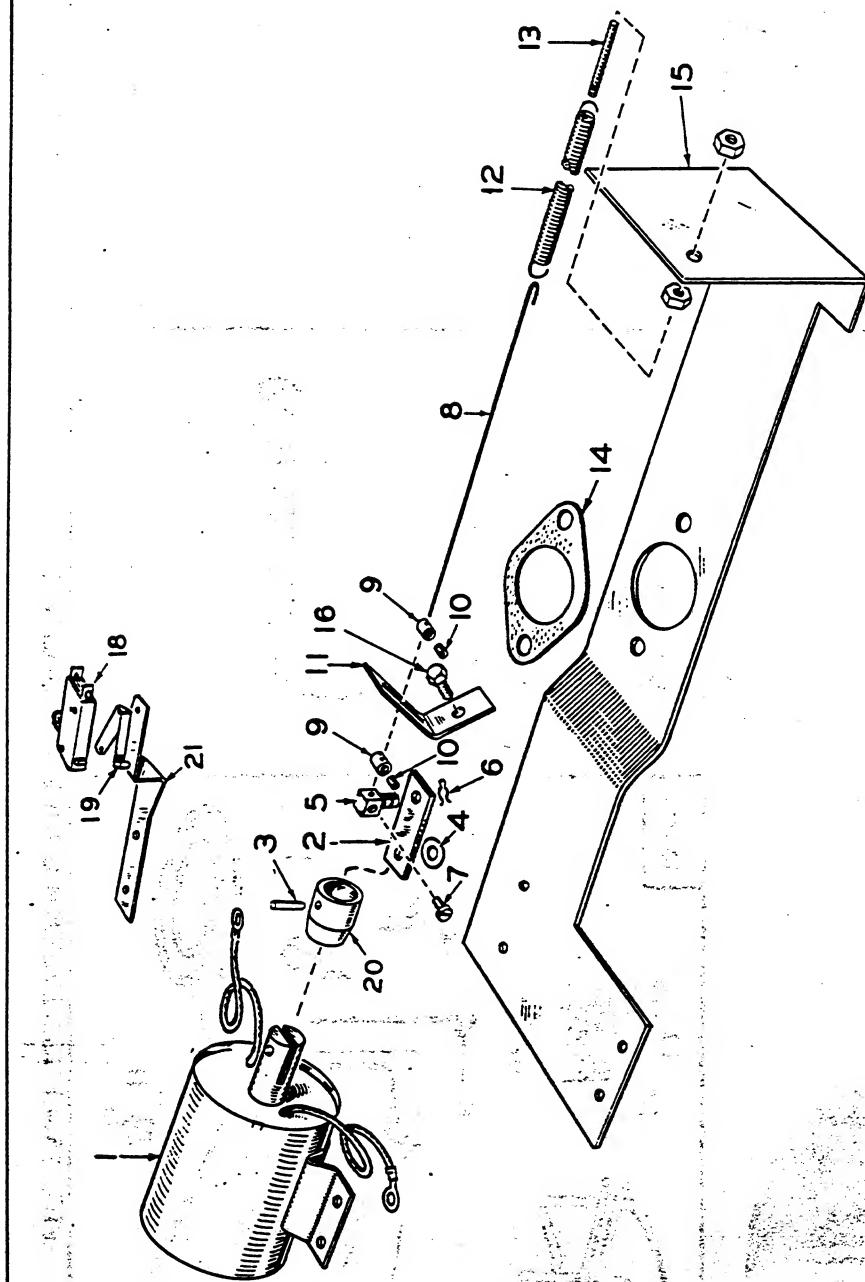


FIG. 12B - ANTI-DIESELING CONTROL GROUP

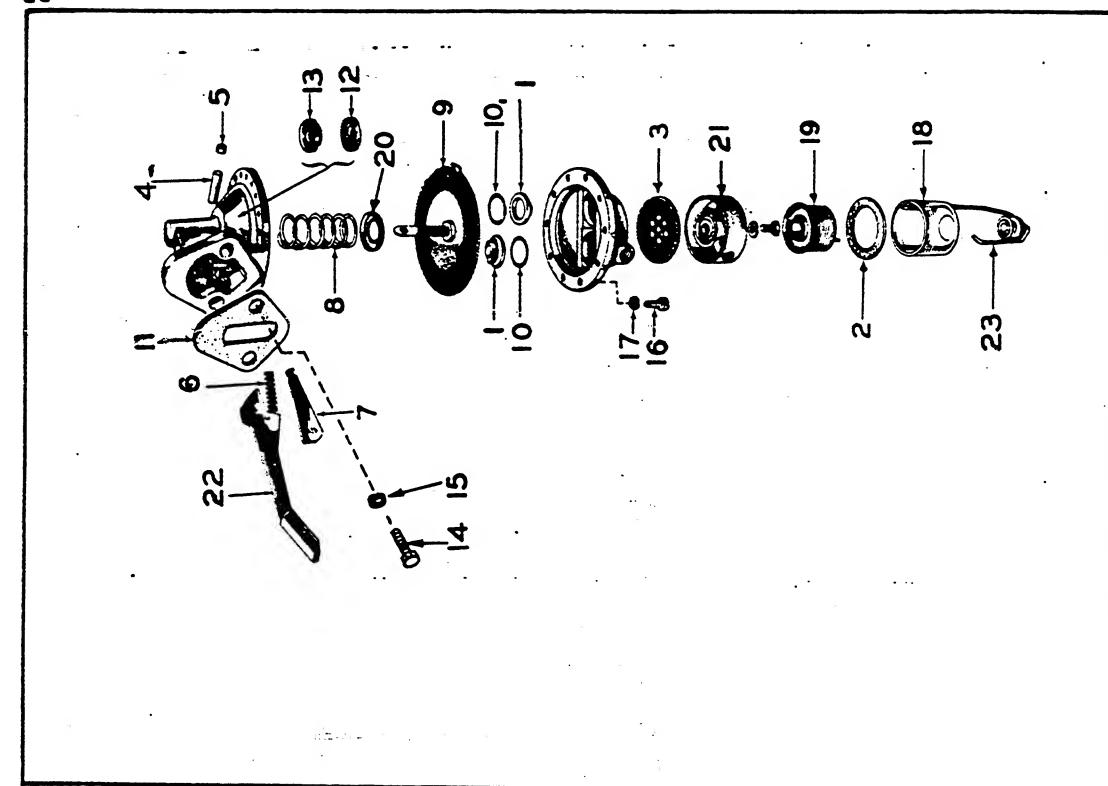


FIG. 14 - FUEL PUMP GROUP

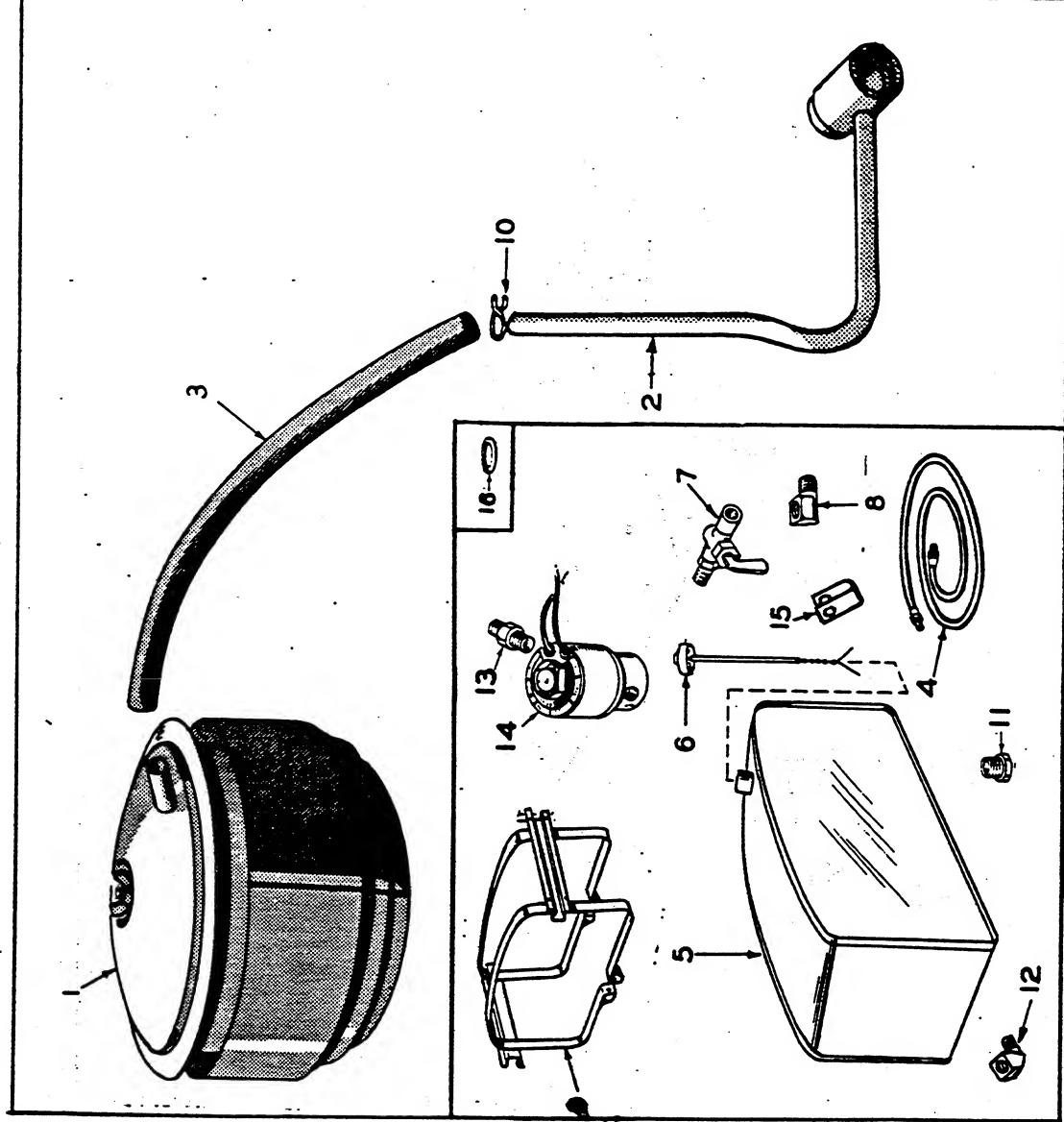
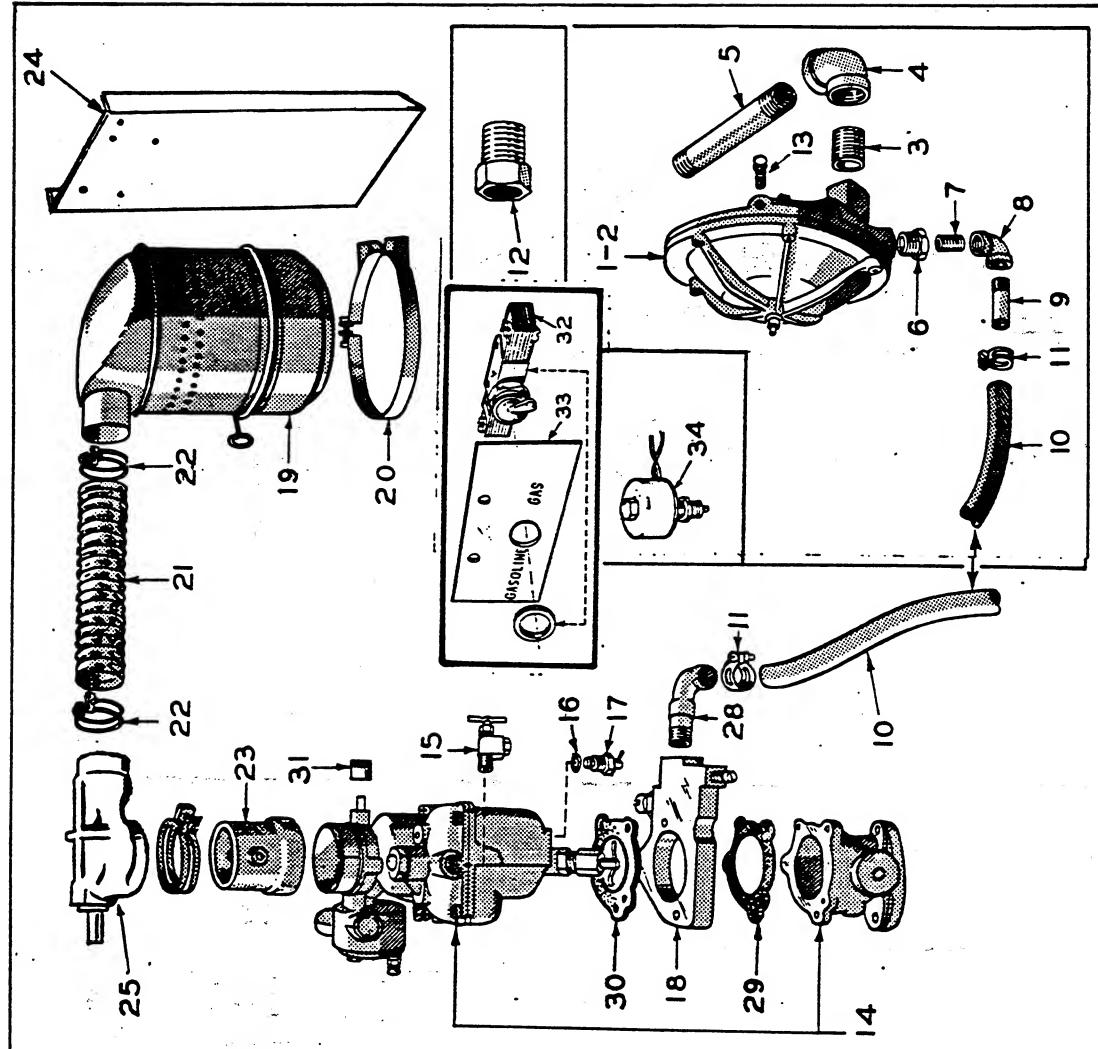


FIG. 13 - FUEL SYSTEM GROUP -(GASOLINE)

FIG. 16 - SPECIAL FUEL SYSTEM GROUP - (COMBINATION GAS-GASOLINE) and (GAS ONLY)



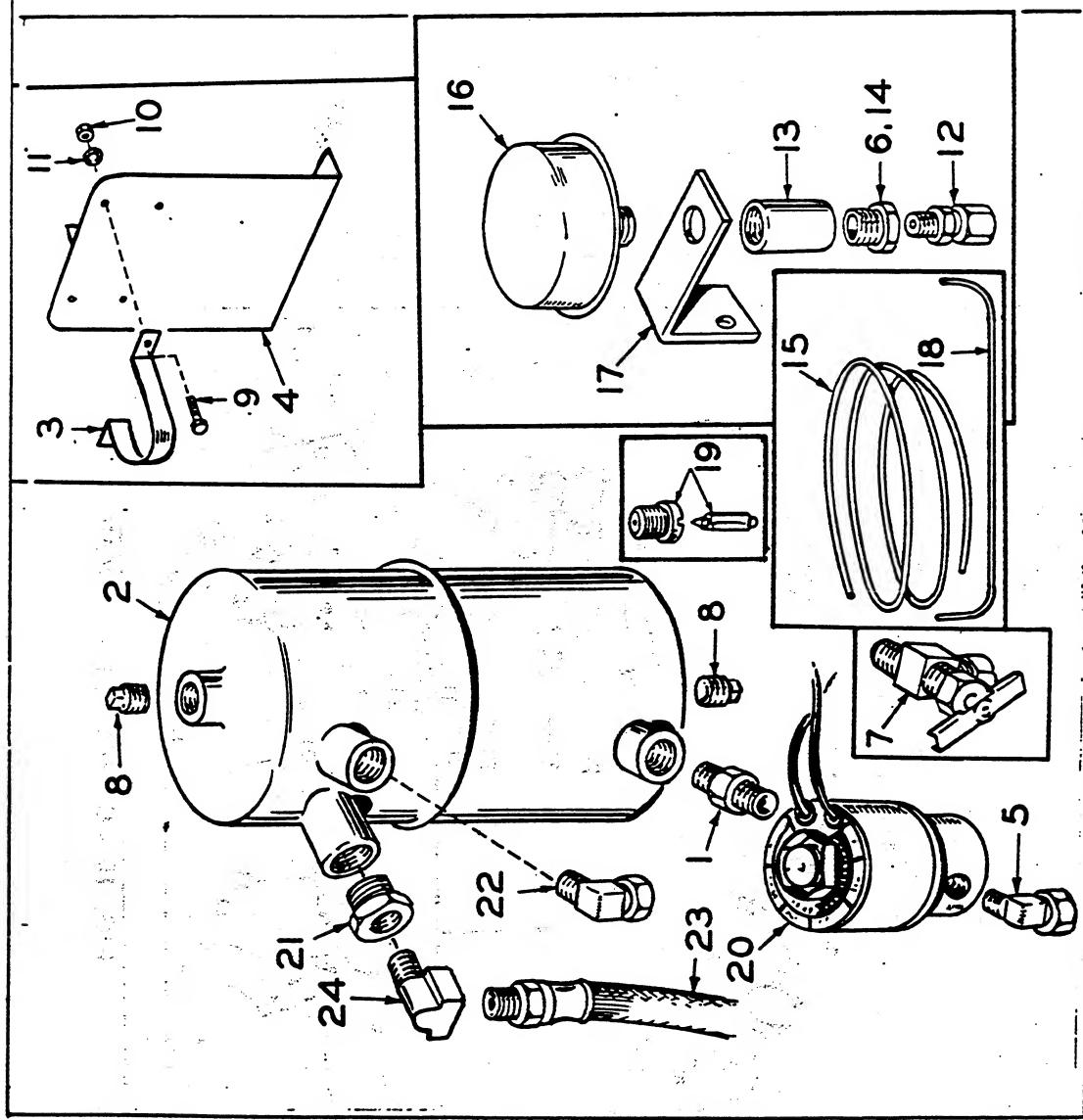


FIG. 17 - "DAY" TANK (OPTIONAL EQUIPMENT)

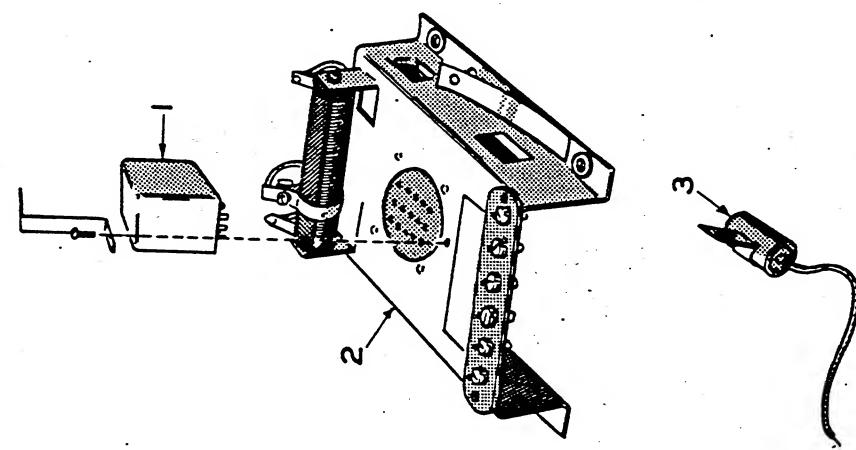


FIG. 18 - AUTOMATIC VOLTAGE REGULATOR GROUP
(Used only on Models Prior to Spec "J")

**FIG. 20 - GENERATOR GROUP
(Rotating Exciter Portion)
Prior to Spec "J"**

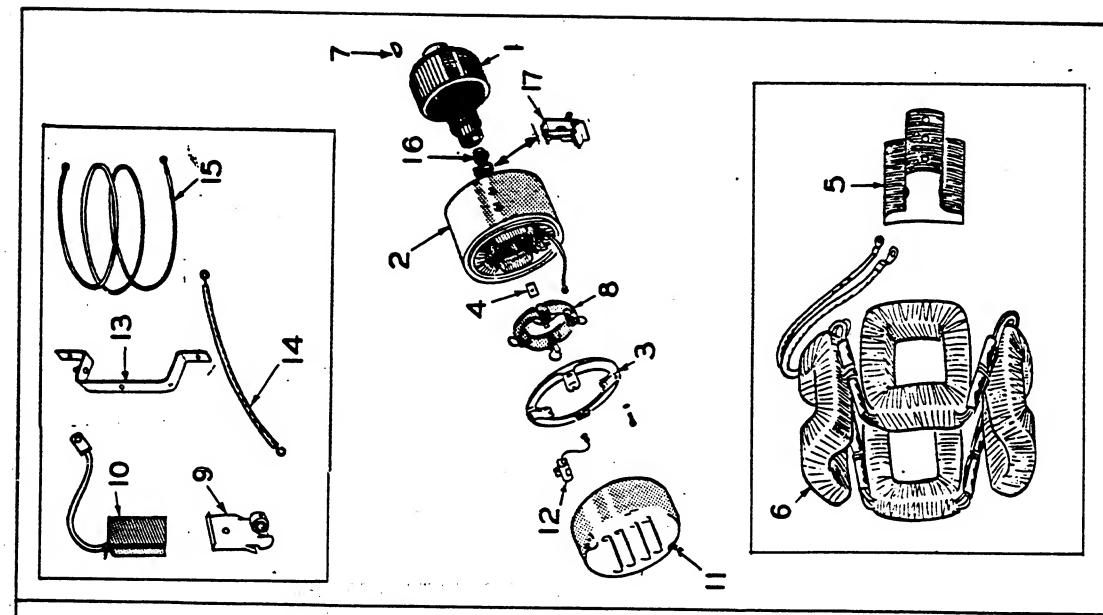
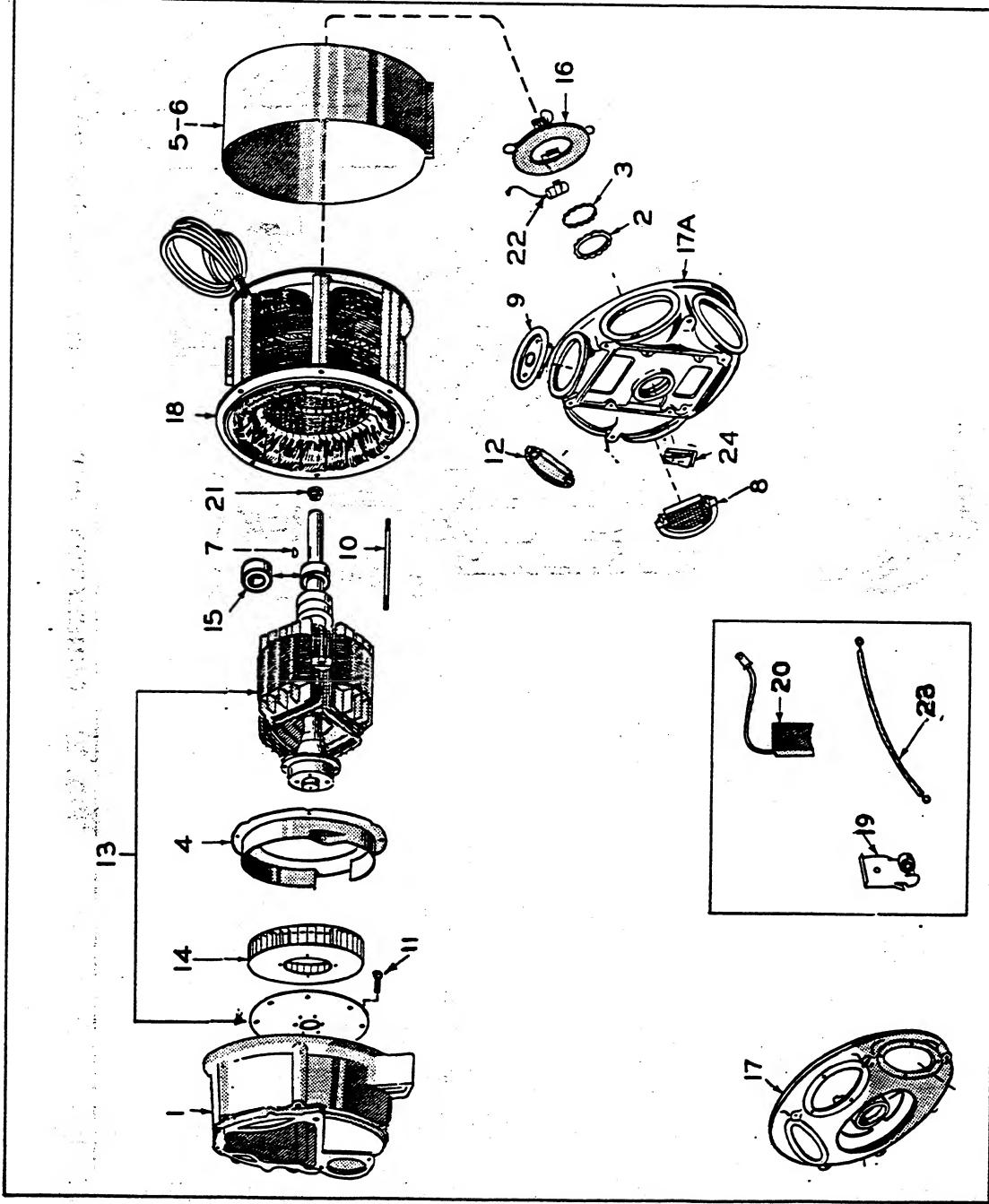


FIG. 19 - GENERATOR GROUP (Alternator Portion)



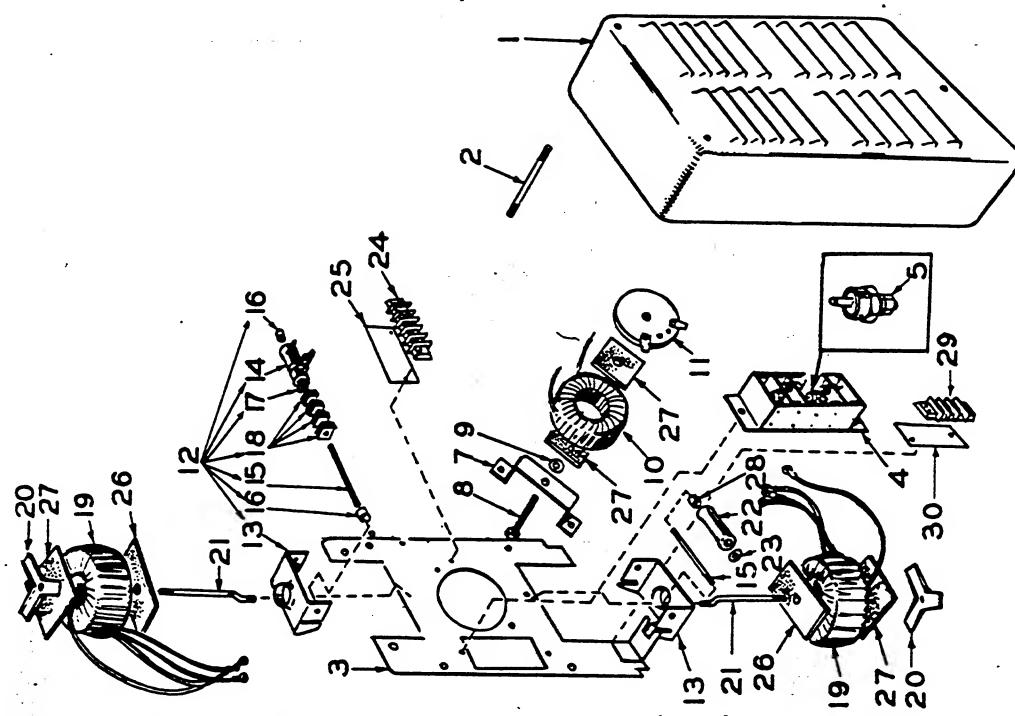


FIG. 21 - GENERATOR GROUP (Static Exciter Portion) - Begin Spec "J"

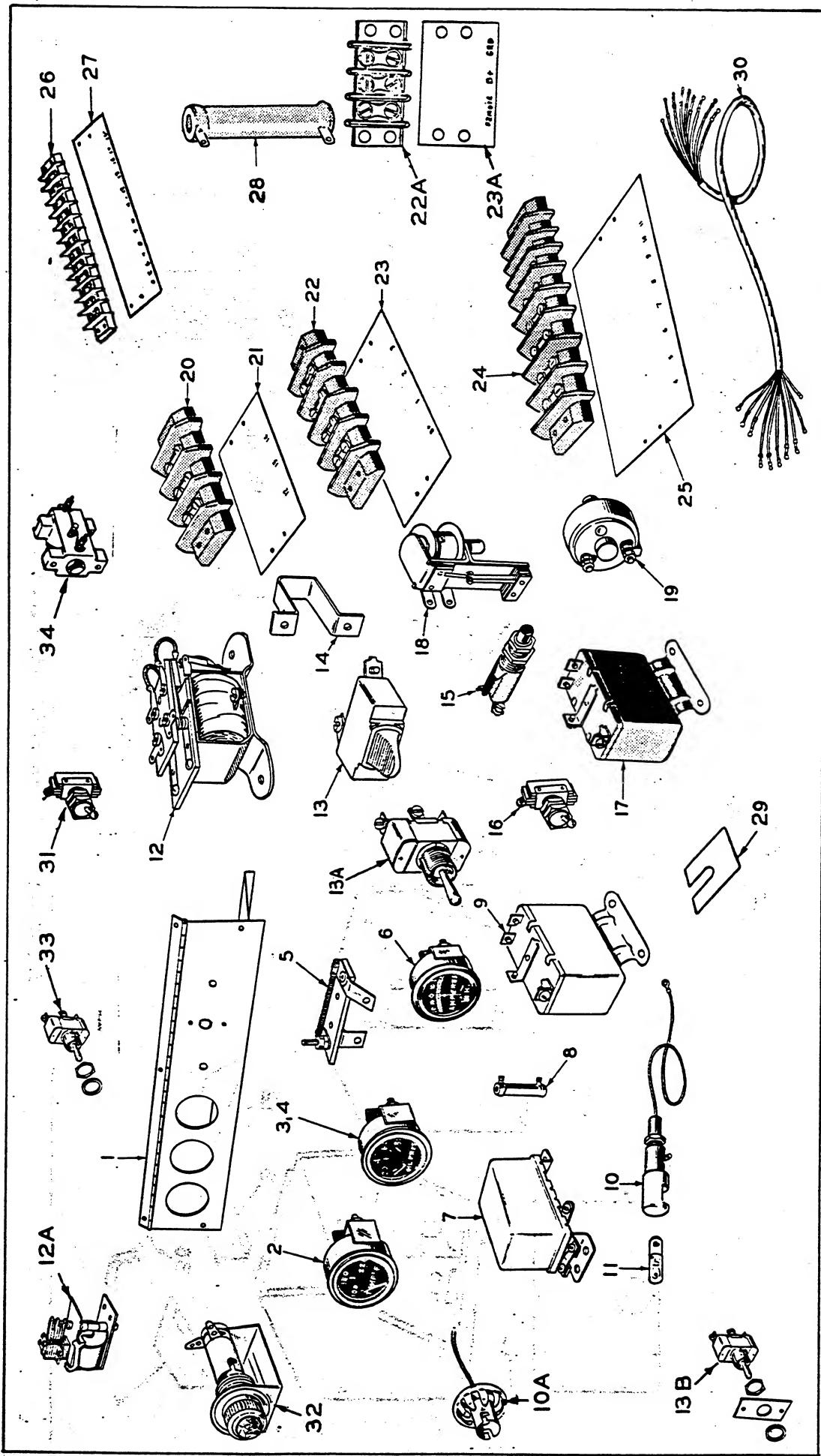


FIG. 22 - LOWER CONTROL PANEL GROUP

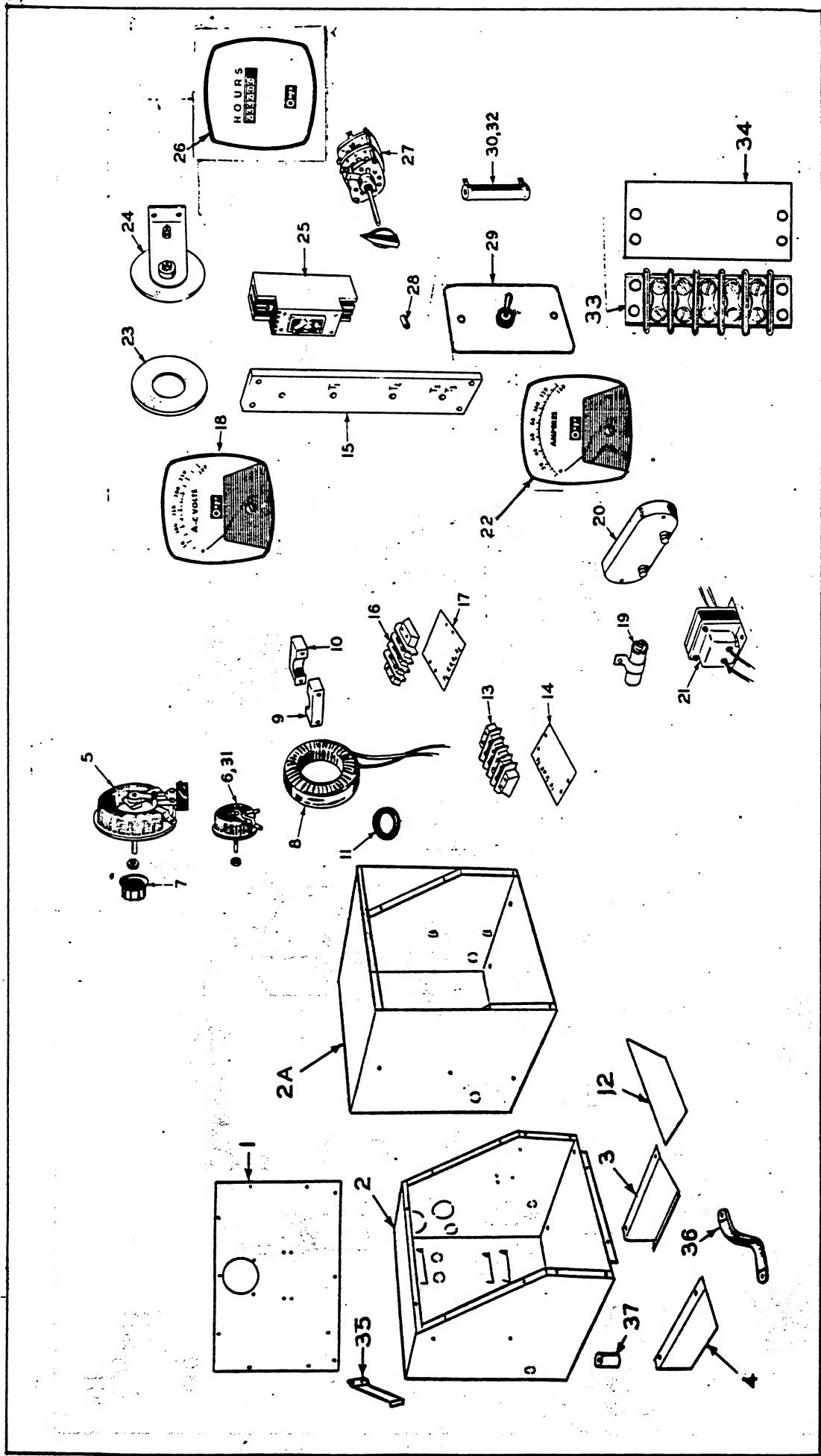


FIG. 23 - UPPER CONTROL PANEL GROUP

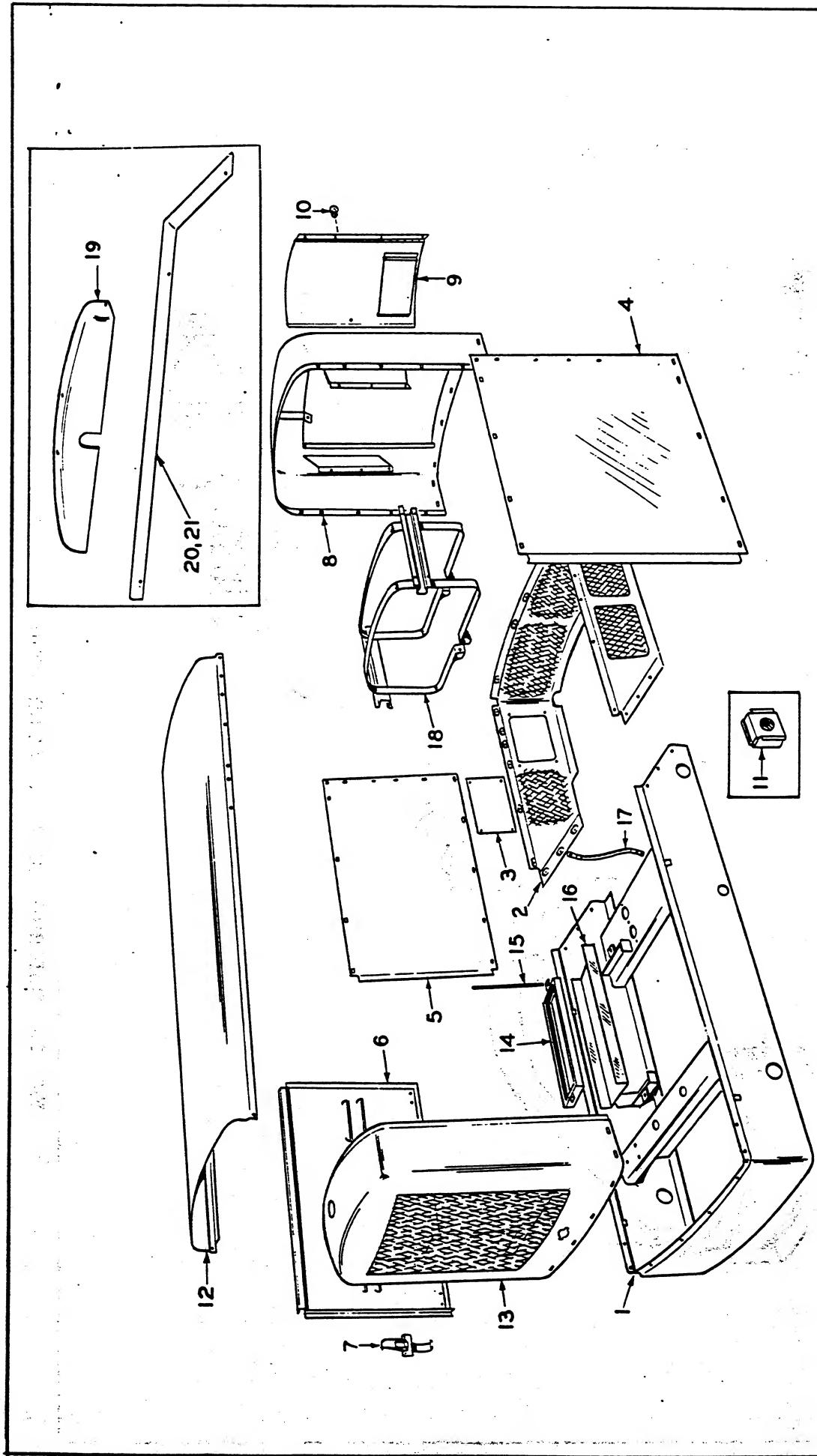


FIG. 24 - HOUSING GROUP

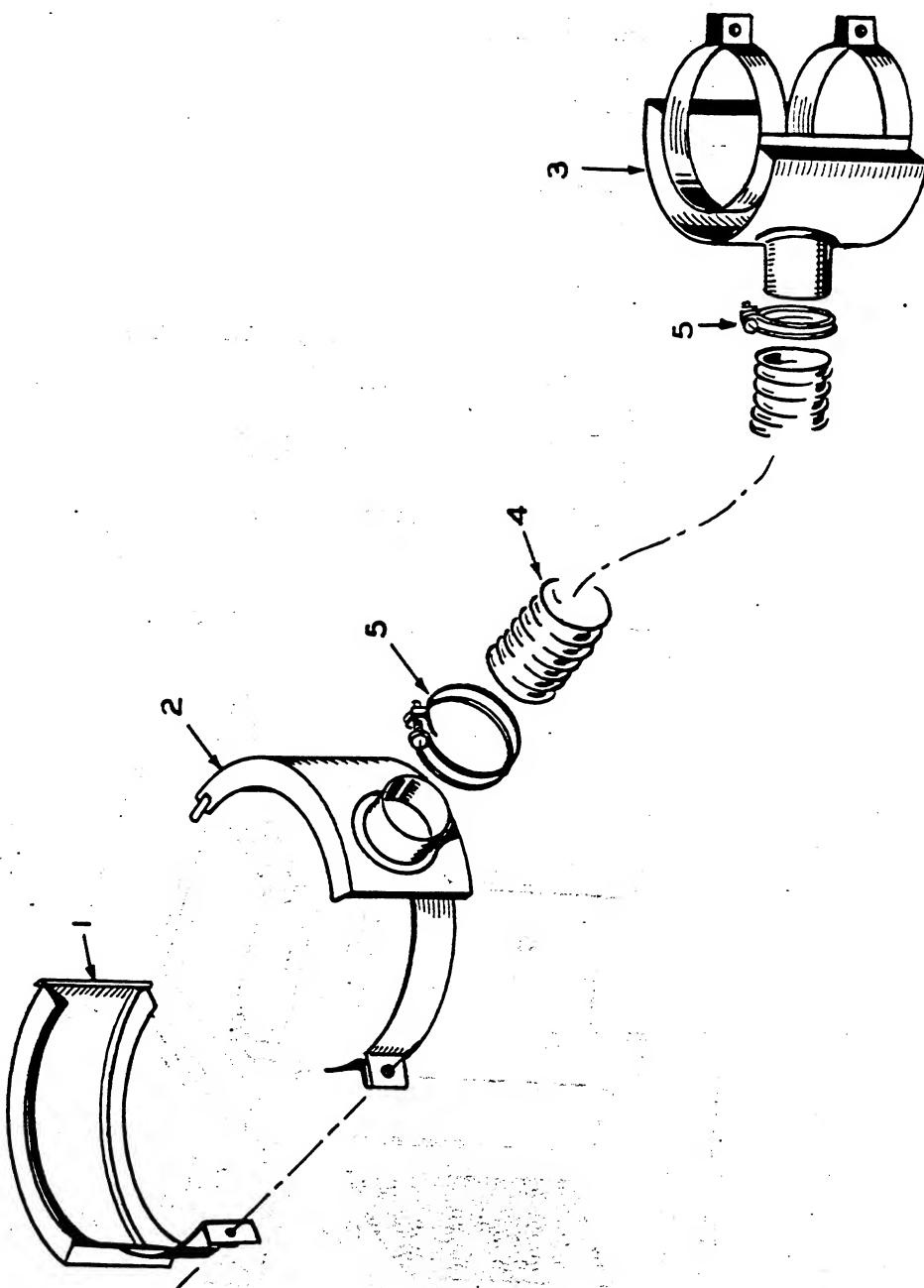


FIG. 25 - CARBURETOR AIR HEATER GROUP (X-RAY MODELS ONLY).

PARTS LIST

19

REF. NO.	QUANT. USED	DESCRIPTION
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FIG. 1 - EXTERNAL VIEW, ENGINE PARTS GROUP

† NOTE: Ford Part numbers listed are for 1956 or later Ford Model BPF-6005A Engine (Onan #100P200). When ordering parts for Ford Model JF, Spec No. JF6-1000-S1 Engine (Onan #100P169) order by description. Furnish Ford Engine Model and Piston Displacement when ordering parts from Ford Source.

† 100P169	† 100P200	Engine, Replacement - (Ford Motor Co. Model JF, Spec No. JF6-1000-S1, 223 Cubic Inch Displacement.) General description: INCLUDES complete Block, Fuel Pump & Fuel Filter, Lubricating Oil Filter, Distributor, Spark Plugs, High Tension Leads, Valve Rotators, Flywheel, Water Pump, Fan Bracket & Pulley Assembly. EXCLUDES Carburetor, Starter, Generator, Voltage Regulator, Ignition Coil, Governor, Radiator, Fan Blades, Fan Belt. - For Plants Beginning with Spec "D" Onan Models. (For Replacement Parts see note above).
		★Gasket Set, Engine Overhaul - Includes Parts Marked ▲
		For Engines Built 1955 through 1959
		For Engines Built 1960
		For Engines Built 1961 and Later
		★Gasket Set, Engine Upper Service - Valve Grind - Includes Parts Marked †
		For Engines Built 1955 through 1959
		For Engines Built 1960
		For Engines Built 1961 and Later
		★▲Gasket, Timing Gear Cover
		For Engines Built 1955 through 1960
		For Engines Built 1961 and Later

- Give plant Serial Number when ordering these parts.

▲ - Contained in Engine Overhaul Gasket Set.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
(FM)COAE-6051-B	1		★†Gasket, Cylinder Head For Engines Built 1955 through 1960
(FM)CIAZ-6051-A	1		▲Seal, Oil - Crankshaft Rear Main Bearing Cap
(FM)CIAE-6336-A	2		†Gasket, Valve Push Rod Cover
(FM)EAA-6521-B	1		†Grommet, Rocker Arm Cover
(FM)B9A-6570-A	4		†Seal, Valve Stem - Umbrella Type - (FM)B5A-6571-A
185-46	12		★†Gasket, Valve Rocker Arm Cover For Engines Built 1955 through 1959
(FM)B7A-6584-A	1		†Seal, Oil Inlet Tube For Engines Built 1960 and Later
(FM)COAE-6584-A	1		▲Gasket, Cover Plate
(FM)EAA-6594-A	1		▲Gasket, Inlet Tube
(FM)EAA-6619-C	1		▲Gasket, Oil Pump Mounting
(FM)B9AE-6626-A	1		★Seal, Oil - Crankshaft Front For Engines Built 1955 through 1960
(FM)B7A-6659-A	1		▲Gasket, Oil Pan
(FM)EAA-6700-B	1		▲Gasket, Water Pump Housing For Engines Built 1960 and Later
(FM)CIAE-6700-A	1		★†Gasket, Water Outlet Connection For Engines Built 1955 through 1959
185-61	2		▲Packing, Crankshaft - (FM)B4A-6701-A
(FM)COAE-6710-A	1		▲Gasket, Oil Pan
(FM)EAA-8507-A	1		▲Gasket, Water Pump Housing For Engines Built 1960 and Later
(FM)B7A-8507-A	1		★†Gasket, Water Outlet Connection For Engines Built 1955 through 1959
(FM)EAG-8255-B	1		▲Gasket, Fuel Pump Mounting
(FM)COAE-8255-A	1		▲Gasket, Manifold Outlet
(FM)CPOSE-9417-A	1		†Gasket, Intake Manifold
(FM)IGA-9450	1		†Gasket, Intake Manifold
(FM)B6A-9461-A	4		†Gasket, Intake Manifold
(FM)B6J-9461-A	4		

FIG. 1 - EXTERNAL VIEW, ENGINE PARTS GROUP (Cont.)

★ - Give plant Serial Number when ordering these parts.

▲ - Contained in Engine Overhaul Gasket Set.

† - Contained in Engine Valve Grind Gasket Set.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
(FM)01A-12410-A	1	1	Gasket, Drain Plug 1/2"
(FM)B6A-6010-E	1	1	Block Assembly, Cylinder.
(FM)73248-S	2	2	Dowel, Cylinder Front Cover to Block.
(FM)73249-S	2	2	Dowel, Generator Adapter to Block.
(FM)EAA-65221-B	1	1	Gasket, Valve Push Rod Cover - Contained in Gasket Set.
(FM)87710-S	2	2	Plug, Cylinder Block Main Oil Lines.
(FM)B5C-6028-B	1	1	Bracket, Engine Front Support.
(FM)20388-S8	4	4	Bolt, Engine Front Support Bracket to Block.
(FM)34807-S8	4	4	Washer, Lock.
(FM)B6A-6049-D	1	1	Head, Cylinder - Prior to FORD Serial #12317S5CR.
(FM)COAE-6049-A	1	1	Head, Cylinder - Begin FORD Serial #12317S5CR.
(FM)B6A-6066-A	16	16	Bolt, Cylinder Head.
(FM)COAE-6051-B	1	1	Gasket, Cylinder Head
(FM)CIAZ-6051-A	1	1	For Engines Built 1955 through 1960
(FM)B6A-6019-A	1	1	For Engines Built 1961 and Later
(FM)357913-S	10	10	Cover, Cylinder Timing Gear - Front - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)B6C-6059-A).
(FM)34805-S8	10	10	Bolt, Cylinder Front Cover to Block - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)20484-S8).
(FM)EAA-6129-A	1	1	Washer, Lock.
(FM)20390-S8	2	2	Bracket, Generator to Cylinder Block Mounting.
(FM)34808-S8	2	2	Bolt, Generator Mounting Bracket to Block.
(FM)7HA-6266-A	6	6	Washer, Lock.
(FM)7HA-6266-A	6	6	Plug, Cylinder Head.
185-68	1	1	Plug, Cylinder Block.
(FM)34826-S7	1	1	Indicator, Oil Level - (FM)B86-6750-A.
(FM)25015-S8	1	1	Washer, Lock.
309-11	1	1	Bolt, Crankcase Ventilation Tube to Cylinder Block.
			Thermostat, Water - 147° to 152° Dole Type.

FIG. 1 - EXTERNAL VIEW, ENGINE PARTS GROUP (Cont.)

1 Gasket, Drain Plug 1/2"

1 Block Assembly, Cylinder.

2 Dowel, Cylinder Front Cover to Block.

2 Dowel, Generator Adapter to Block.

1 Gasket, Valve Push Rod Cover - Contained in Gasket Set.

2 Plug, Cylinder Block Main Oil Lines.

1 Bracket, Engine Front Support.

4 Bolt, Engine Front Support Bracket to Block.

4 Washer, Lock.

1 Head, Cylinder - Prior to FORD Serial #12317S5CR.

1 Head, Cylinder - Begin FORD Serial #12317S5CR.

16 Bolt, Cylinder Head.

1 Gasket, Cylinder Head

For Engines Built 1955 through 1960

For Engines Built 1961 and Later

1 Cover, Cylinder Timing Gear - Front - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)B6C-6059-A).

1 Bolt, Cylinder Front Cover to Block - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)20484-S8).

1 Washer, Lock.

1 Bracket, Generator to Cylinder Block Mounting.

1 Bolt, Generator Mounting Bracket to Block.

1 Washer, Lock.

1 Plug, Cylinder Head.

1 Plug, Cylinder Block.

1 Indicator, Oil Level - (FM)B86-6750-A.

1 Washer, Lock.

1 Bolt, Crankcase Ventilation Tube to Cylinder Block.

1 Thermostat, Water - 147° to 152° Dole Type.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
26	(FM)EAG-8592-B	1	Connection, Cylinder Head Water Outlet.
27	(FM)20388-S8	4	Bolt, Water Outlet Connection to Cylinder Head.
28	(FM)34847-S8	4	Washer, Lock.
29	(FM)EAA-8255-B	1	Gasket, Water Outlet Connection.
30	(FM)20470-S8	2	Bolt, Generator to Mounting Bracket.
31	(FM)33801-S8	2	Nut.
32	(FM)34808-S8	2	Washer, Lock.
33	(FM)EAA-6519-B	1	Cover, Valve Push Rod.
34	(FM)24504-S8	4	Bolt, Push Rod Cover to Cylinder Block.
35	(FM)44722-S8	4	Washer, Flat.
36	(FM)EAA-6589-B	4	Grommet, Valve Push Rod Cover Stud.
37	185-9	1	Gasket, Cylinder Timing Gear - Front - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)EAG-6020-B) - (FM)EAA-6020-B.
38	(FM)B6C-10884-A	1	Bulb Temperature Indicator.
40	(FM)87837-S	2	Plug, Cylinder Block Oil Lines.
41	(FM)B2A-6026-A	4	Plug, To Seal Camshaft Bearing Oil Hole.
42	(FM)EAA-6890-C	1	Insert, Oil Filter Mounting.
43	(FM)8A-8115	1	Cock, Cylinder Block Drain.
44	(FM)358066-S8	1	Plug, Water Outlet Connection.
45	193A81	1	Sender, Engine Water Temperature (Engine Unit only) - Prior to Spec "F" - 6 Volt.
45	193A104	1	Sender, Engine Water Temperature (Engine Unit only) - Begin Spec "F" - 12 Volt.
46	193P38	1	Sender, Engine Oil Pressure (Engine Unit only) - For Spec "A", "B" and "C" - Use with 0-60# gauge.
46	193B89	1	Sender, Engine Oil Pressure (Engine Unit only) - For Spec "D" - Use with 0-80# gauge.
46	193A108	1	Sender, Engine Oil Pressure (Engine Unit only) - Begin Spec "F" - 12 Volt.
47	309A146	1	Switch, Water High Temperature Cutoff - Non-adjustable (Replaces 309B1).
48	309A64	1	Switch, Low Oil Pressure Cutoff (Prior to Spec "M" - Optional) - Replaces switch used prior to Spec "F" with higher pressure break.
49	(FM)EAG-8625-A	1	Hub and Pulley Assembly - Fan.
	(FM)EBR-6023-A	1	Pin, Timing.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 2 - WATER PUMP PARTS GROUP

- 1 (FM)B4C-8501-A 1 Pump, Assembly, Water - Includes Gasket.
- 2 (FM)B2A-8591-A 1 Repair Kit, Water Pump - Includes parts marked "a".
- 3 (FM)358066-S8 1 Plug, Water Pump.
- 4 (FM)20428-S 2 Bolt, Pump to Block.
- 5 (FM)34847-S 2 Washer, Lock.
- 6 (FM)EAA-8507-A 1 a. Gasket, Water Pump Housing.
- 7 (FM)EPB-8509-B 1 Pulley, Water Pump.
- 8 (FM)EAA-8512-A 1 a. Impeller, Water Pump - Supplied in (FM) #B2A-8591-A Repair Kit only.
- 9 (FM)2GA-8530-A 1 a. Shaft and Bearing Assembly, Water Pump.
- 10 (FM)0BA-8576-A 1 a. Ring, Lock - Water Pump Shaft - Front.
- 11 (FM)8BA-8630-A 1 a. Ring, Lock - Water Pump Pulley to Bearing - Supplied in (FM) #B2A-8591-A Repair Kit only.
- 12 (FM)7RA-8564-B 1 a. Seal, Water Pump.
- 13 (FM)7HA-8550 1 a. Slinger, Water Pump.

FIG. 3 - PISTON & CONNECTING ROD GROUP

- 1 (FM)B8A-6108-AA 6 Piston - Includes Pin and Retainers - Standard Size (Available also in .020", .030", .040" and .060" Oversize - Specify).
- 2 (FM)EAA-6135-B 6 Pin, Piston - Standard Size (Available also in .001" or .002" Oversize - Specify).
- 3 (FM)B7Q-6140-A 12 Retainer, Piston Pin - Begin Ford Serial #5000.
- 4 (FM)B4-6148-FAA 3 Ring Set, Piston - 3 Ring - For 2 Pistons - Standard Size (Available also in .020", .030", .040" and .060" Oversize - Specify).
- 5 (FM)B8A-6200-B 6 Rod, Connecting - Includes Bushing - Excludes Bearings.
- 6 (FM)EAA-6207-A 6 Bushing, Connecting Rod.
- 7 (FM)EAA-6207-A 6 Bearing, Connecting Rod - Standard Red Size (or Blue Size (FM) #EAG-6211-H) Also Available in .010", .020" and .030" Undersize - Specify - (FM)EAG-6211-G.
- 8 (FM)185-22 12 Nut, Connecting Rod - use in conjunction with Pin Nut - Begin Ford Serial #7000 (Prior to Serial #7000 use (FM)B4A-6212-A).
- 9 (FM)B8A-6214-A 12 Pal Nut, Connecting Rod Nut - use with above Nut.
- 10 (FM)45218-S8 12 Bolt, Connecting Rod.
- 11 (FM)EAA-6214-B 12 Bolt, Connecting Rod.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
1	(FM)B7A-6250-A	1	Camshaft - Less Gear - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)B6A-6250-A).
2	(FM)EAA-6256-A	1	Sprocket, Camshaft.
3	(FM)74175-S	1	Key, Camshaft Sprocket to Camshaft.
4	(FM)20350-S7	1	Bolt, Sprocket to Camshaft.
5	(FM)34808-S8	1	Washer, Lock.
6	(FM)EAA-6261-B	3	Bearing, Camshaft - Front, Front Intermediate and Rear - Standard Size (Also available in .015" Undersize - Specify).
7	(FM)EBU-6265-A	1	Spacer, Camshaft Sprocket.
8	(FM)EAA-6268-B	1	Chain, Timing.
9	(FM)EAA-6269-B	1	Plate, Camshaft Thrust.
10	(FM)20346-S8	2	Bolt, Camshaft Thrust Plate to Block.
11	(FM)34806-S7	2	Washer, Lock.
12	(FM)EAA-6270-B	1	Bearing - Camshaft - Rear Intermediate - Standard Size (Also available in .015" Undersize - Specify).
14	(FM)EAA-6278-B	1	Washer, Camshaft Sprocket.

FIG. 4 - CAMSHAFT GROUP

Camshaft - Less Gear - Begin Ford Serial #5000 (Prior Serial #5000 use (FM)B6A-6250-A).

1 (FM)B7A-6250-A 1
 2 (FM)EAA-6256-A 1
 3 (FM)74175-S 1
 4 (FM)20350-S7 1
 5 (FM)34808-S8 1
 6 (FM)EAA-6261-B 3
 7 (FM)EBU-6265-A 1
 8 (FM)EAA-6268-B 1
 9 (FM)EAA-6269-B 1
 10 (FM)20346-S8 2
 11 (FM)34806-S7 2
 12 (FM)EAA-6270-B 1
 14 (FM)EAA-6278-B 1

Key, Camshaft Sprocket to Camshaft.
 Bolt, Sprocket to Camshaft.
 Washer, Lock.
 Bearing, Camshaft - Front, Front Intermediate and Rear - Standard Size (Also available in .015" Undersize - Specify).
 Spacer, Camshaft Sprocket.
 Chain, Timing.
 Plate, Camshaft Thrust.
 Bolt, Camshaft Thrust Plate to Block.
 Washer, Lock.
 Bearing - Camshaft - Rear Intermediate - Standard Size (Also available in .015" Undersize - Specify).
 Washer, Camshaft Sprocket.

FIG. 5 - CRANKSHAFT GROUP

Crankshaft.

1 (FM)B6A-6303-E 1
 2 (FM)B8A-6306-B 1
 3 (FM)74175-S 1

Sprocket, Crankshaft.
 Key, Crankshaft Sprocket to Crankshaft.

Bearing, Rear Main - Standard - Also available in .010", .020" or .030" Undersize - Specify.

Prior to FORD Serial #12317S5CR.

Begin FORD Serial #12317S5CR.

Bearing, Front and Front Intermediate Main - Standard - Also available in .010", .020" or .030" Undersize - Specify.

Seal, Crankshaft Rear Main Bearing Cap - Asbestos & Rubber - Graphite Coated.

Bearing, Rear Intermediate Main - Standard - Also available in .010", .020" or .030" Undersize - Specify.

Bolt, Crankshaft Main Bearing Cap.

Lockwasher.

1 (FM)B6A-6303-E 1
 2 (FM)B8A-6306-B 1
 3 (FM)74175-S 1
 4 (FM)EAG-6331-G 2
 5 (FM)B9TE-6333-A 2
 6 (FM)B9TE-6333-A 4
 6 (FM)EAA-6336-B 2
 7 (FM)B9TE-6342-A 2
 8 (FM)59A-6345-A 8
 9 (FM)34809-S8 8

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 5 - CRANKSHAFT GROUP (Cont.)

10	(FM)EAA-6378-A	1	Flywheel - Includes Ring Gear - (FM)B4A-6375-B.
11	(FM)EAA-6379-A	1	Washer, Plain - Vibration Damper to Crankshaft.
12	(FM)EAA-6384-A	6	Bolt, Flywheel to Crankshaft - 7/16"-20 x .87" Special Head.
13	(FM)EAA-6384-A	1	Gear, Flywheel Ring.
14	(FM)B4A-6701-A	2	Packing, Crankshaft - Rear - 4.80" long - Asbestos - (FM)B4A-6701-A.
15	(FM)EAG-6316-E	1	Sheave (Damper).
16	(FM)354566-S8	1	Bolt, Damper to Crankshaft - 9/16"-18 x 1-1/2" Hex Head.
17	(FM)74151-S	1	Key, Crankshaft Damper - 1/4" x 7/8".
18	(FM)B9TE-6700-A	1	Seal, Oil - Cylinder Front Cover.
19	(FM)B6A-6310-B	1	Slinger, Crankshaft Oil - Begin Spec "D", 1956 year engine.

FIG. 6 - VALVE GROUP

1	(FM)EAA-6500-D	12	Tappet, Valve.
2	(FM)EAF-6505-D	6	Valve, Exhaust.
3	(FM)B4A-6507-AA	6	Valve, Intake - Standard Stem (Also available in .003", .015" or .030" Oversize Stem - Specify).
4	(FM)B6A-6513-A	12	Spring, Valve.
5	(FM)B5Q-6514-A	6	Retainer, Valve Spring - Exhaust.
5	(FM)EAM-6514-B	6	Retainer, Valve Spring - Begin Ford Serial #10001 (Prior Serial #10001, use (FM)EBU-6514-B).
6	(FM)EAM-6518-A	12	Lock, Valve Spring Retainer.
7	(FM)EAA-6531-A	4	Support, Valve Rocker Arm Shaft - Front, Center Intermediates and Rear.
8	(FM)353968-S	4	Bolt, Rocker Arm Shaft Support to Cylinder Head.
9	(FM)34808-S8	4	Lockwasher.
10	(FM)EAA-6532-A	2	Support, Valve Rocker Arm Shaft - Front Intermediate & Rear Intermediate.
11	(FM)EAA-6549-B	12	Screw, Valve Rocker Arm Adjusting.
12	(FM)8EQ-6550-A	6	Cap, Valve Stem - Exhaust.
13	185-46	12	Seal, Valve Stem- Umbrella Type - (FM)B5A-6571-A.
14	(FM)EAA-6552-A	12	Lock Nut, Valve Rocker Arm Adjusting Screw.
15	(FM)EAA-6563-B	1	Shaft, Valve Rocker Arm.
16	(FM)B6A-6564-G	12	Arm, Valve Rocker.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
17	(FM)B6A-6565-E	12	Rod, Valve Push - Begin Ford Serial #5000 (Prior to Serial #5000 use (FM) #B6Q-6565-A).
18	(FM)B9A-6570-A	2	Grommet, Valve Rocker Arm Cover Stud.
19	(FM)EAA-6572-A	2	Plug, Valve Rocker Arm Shaft.
20	(FM)EAA-6574-A	2	Bracket, Valve Rocker Arm Shaft Inlet & Outlet Oil Tubes.
21	(FM)EAA-6580-B	1	Tube, Valve Rocker Arm Shaft Oil Inlet.
22	(FM)B7A-6582-A	1	Cover, Assembly - Valve Rocker Arm - Begin Ford Serial #5000 (Prior to Serial #5000 use (FM) #B5A-6582-B).
23	(FM)88442-S	2	Stud, Rocker Arm Cover to Cylinder Head.
24	(FM)34180-S8	2	Nut.
25	(FM)352197-S8	2	Washer, Plain - Begin Ford Serial #10001 (Prior to Serial #10001 use two (FM) #352197-S8).
26	(FM)B7A-6584-A	1	Gasket, Valve Rocker Arm Cover.
27	(FM)B6A-6587-A	5	Spring, Valve Rocker Arm to Shaft Locating.
28	(FM)B5A-6588-B	1	Tube, Valve Rocker Arm Shaft Oil Outlet.
29	(FM)EAA-6598-A	2	Washer, Spring-Valve Rocker Arm Shaft.
30	(FM)EAA-6590-A	4	Washer, Valve Rocker Arm Shaft - Steel.
31	(FM)72035-S7-8	1	Pin, Cotter - 1/8" x 1".
32	(FM)EAA-6594-A	1	Seal, Valve Rocker Arm Shaft Oil Inlet Tube - Rubber.
33	(FM)CIAE-6766-B	1	Cap, Oil Filler & Breather - Replaces EAF-6766-B.
34	(FM)EAA-6789-A	1	Gasket, Oil Filler & Breather Cap.
	(FM)B9T-6057-AA	6	Insert, Exhaust Valve - Begin Ford Serial #7000.
	(FM)EBU-6517-B	12	Sleeve, Valve Spring Retainer - Intake - Prior to Ford Serial #10001.
	(FM)B9A-6517-A	12	Sleeve, Valve Spring Retainer - Intake & Exhaust - Begin Ford Serial #10001.
185-51		1	Kit, Gasket & Grommet - Valve Rocker Arm Cover - (FM)B2A-6585-A - Includes (1) Gasket (FM) #B7A-6584-A and (2) Grommet (FM) #B9A-6570-A.

FIG. 6 - VALVE GROUP (Cont.)

Rod, Valve Push - Begin Ford Serial #5000 (Prior to Serial #5000 use (FM) #B6Q-6565-A).
 Grommet, Valve Rocker Arm Cover Stud.
 Plug, Valve Rocker Arm Shaft.
 Bracket, Valve Rocker Arm Shaft Inlet & Outlet Oil Tubes.
 Tube, Valve Rocker Arm Shaft Oil Inlet.
 Cover, Assembly - Valve Rocker Arm - Begin Ford Serial #5000 (Prior to Serial #5000 use (FM) #B5A-6582-B).
 Stud, Rocker Arm Cover to Cylinder Head.

Washer, Plain - Begin Ford Serial #10001 (Prior to Serial #10001 use two (FM) #352197-S8).
 Gasket, Valve Rocker Arm Cover.

Spring, Valve Rocker Arm to Shaft Locating.

Tube, Valve Rocker Arm Shaft Oil Outlet.

Washer, Spring-Valve Rocker Arm Shaft.

Washer, Valve Rocker Arm Shaft - Steel.

Pin, Cotter - 1/8" x 1".

Seal, Valve Rocker Arm Shaft Oil Inlet Tube - Rubber.

Cap, Oil Filler & Breather - Replaces EAF-6766-B.

Gasket, Oil Filler & Breather Cap.

Insert, Exhaust Valve - Begin Ford Serial #7000.

Sleeve, Valve Spring Retainer - Intake - Prior to Ford Serial #10001.

Sleeve, Valve Spring Retainer - Intake & Exhaust - Begin Ford Serial #10001.

Kit, Gasket & Grommet - Valve Rocker Arm Cover - (FM)B2A-6585-A - Includes (1) Gasket (FM) #B7A-6584-A and (2) Grommet (FM) #B9A-6570-A.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

27

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
1	(FM)B5A-6603-A	1	Body, Oil Pump.
2	(FM)B5A-6608-B	1	Shaft & Gear, Oil Pump Drive.
3	(FM)B5A-6609-B	1	Shaft, Oil Pump Intermediate.
4	(FM)EAA-6614-B	1	Gear, Oil Pump - Driven.
5	(FM)EAA-6614-B	1	Gear, Oil Pump - Drive.
6	(FM)B9AE-6622-C	1	Cover & Inlet Tube, Oil Pump Screen.
7	(FM)20426-S8	2	Bolt, Oil Pump Screen Cover to Body.
8	(FM)34806-S7	2	Lockwasher.
9	(FM)B8A-6616-B	1	Plate, Oil Pump Body Gear or Rotor Cover - Begin Ford Serial #7000 (Prior to Serial #7000 use (FM) #B5A-6616-A).
10	(FM)20386-S8	2	Bolt, Gear Cover Plate to Body.
11	(FM)34806-S7	2	Lockwasher.
12	(FM)EAA-6619-C	1	Gasket, Oil Pump Cover Plate.
13	(FM)B8A-6621-A	1	Pump Assembly, Engine Oil - Less Tube and Screen - Begin Ford Serial #7000 (Prior to Serial #7000 use (FM) #B5A-6621-B).
14	(FM)20326-S7	1	Bolt, Oil Pump to Cylinder Block.
15	(FM)34806-S7	1	Lockwasher.
16	(FM)8BA-6623-A	1	Screen, Engine Oil Pump.
16	(FM)41A-6623-A	1	Screen, Engine Oil Pump - Curved - (If screen is not curved use (FM) #8BA-6623-A).
17	(FM)B4A-6626-A	1	Gasket, Oil Pump Screen Cover & Inlet Tube to Body.
18	(FM)68-6628	1	Retainer, Oil Pump Screen (Use with (FM) #41A6623-A).
18	(FM)8BA-6628-A	1	Retainer, Oil Pump Screen (Use with (FM) #8BA-6623-A - Curved Design).
20	(FM)EAA-6638-A	2	Bolt, Oil Pump Mounting.
21	(FM)33800-S8	2	Nut.
22	(FM)34847-S8	2	Lockwasher.
23	(FM)EAA-6654-A	1	Spring, Oil Relief Valve.
24	(FM)B7A-6659-A	1	Gasket, Oil Pump to Cylinder Block Mounting.
25	(FM)EAA-6663-A	1	Plunger, Oil Relief Valve.
26	(FM)EAA-6666-A	1	Plug, Oil Relief Valve - In Oil Pump Body.
27	(FM)B5A-6675-B	1	Pan, Engine Oil.
28	(FM)20326-S7	2	Bolt, Oil Pan to Cylinder Front Cover.

FIG. 7 - OIL PUMP, OIL FILTER & RELATED PARTS GROUP

Body, Oil Pump.

Shaft & Gear, Oil Pump Drive.

Shaft, Oil Pump Intermediate.

Gear, Oil Pump - Driven.

Gear, Oil Pump - Drive.

Cover & Inlet Tube, Oil Pump Screen.

Bolt, Oil Pump Screen Cover to Body.

Lockwasher.

Plate, Oil Pump Body Gear or Rotor Cover - Begin Ford Serial #7000 (Prior to Serial #7000 use (FM) #B5A-6616-A).

Bolt, Gear Cover Plate to Body.

Lockwasher.

Gasket, Oil Pump Cover Plate.

Pump Assembly, Engine Oil - Less Tube and Screen - Begin Ford Serial #7000 (Prior to Serial #7000 use (FM) #B5A-6621-B).

Bolt, Oil Pump to Cylinder Block.

Lockwasher.

Screen, Engine Oil Pump.

Screen, Engine Oil Pump - Curved - (If screen is not curved use (FM) #8BA-6623-A).

Gasket, Oil Pump Screen Cover & Inlet Tube to Body.

Retainer, Oil Pump Screen (Use with (FM) #41A6623-A).

Retainer, Oil Pump Screen (Use with (FM) #8BA-6623-A - Curved Design).

Bolt, Oil Pump Mounting.

Nut.

Lockwasher.

Spring, Oil Relief Valve.

Gasket, Oil Pump to Cylinder Block Mounting.

Plunger, Oil Relief Valve.

Plug, Oil Relief Valve - In Oil Pump Body.

Pan, Engine Oil.

Bolt, Oil Pan to Cylinder Front Cover.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF.	PART NO.	QUANT. USED	DESCRIPTION
28	(FM)20326-S7	20	Bolt, Oil Pan to Cylinder Block.
29	(FM)34806-S7	21	Lockwasher.
30	185-65	1	Gasket, Oil Pan. - (FM)COAE-6710-A.
32	102A34	1	Gasket, Engine Oil Pan Drain Adapter - Prior to Spec E.
33	122P229	1	Cartridge, Engine Oil Filter - with gaskets - Replaces 122P126.
34	(FM)EAA-6737-A	1	Cover, Oil Filter - Prior to 1960.
34	(FM)BBC-6737-A	1	Cover, Oil Filter - Prior to 1960.
35	(FM)B2A-6741-A	1	Bolt & Valve, Oil Filter Center.
36	(FM)EAA-6746-A	1	Gasket, Engine Oil Filter Element.
37	(FM)EAA-6749-A	1	Gasket, Oil Filter Center Bolt to Cover.
38	(FM)B4A-6751-B	1	Diaphragm, Oil Filter - Use with filter mounting bolt insert (FM) #EAA-6890-C.
39	(FM)EAA-6838-A	1	Gasket, Oil Filter Mounting.
	(FM)B2A-6889-A	1	Spring, Oil Filter Element Retaining.
	(FM)B2A-6898-A	1	Retainer, Oil Filter Element.
40	(FM)EAA-6890-C	1	Insert, Oil Filter Mounting Bolt - Use with filter diaphragm (FM) #B4A-6751-B.
41	102A297	1	Adapter, Oil Drain - Prior to Spec "E".
42	505-40	1	Elbow, Pipe - Oil Drain - 1/2" x 90° - Prior to Spec "C" - Rear Drain.
43	505-143	1	Nipple, Pipe - Oil Drain - 1/2" x 6-1/2" x 3/8" - Prior to Spec "C" - Rear Drain.
44	505-100	1	Nipple, Pipe - Close - Oil Drain - 1-1/2" x 1-1/8".
45	505-101	2	Nipple, Pipe - 3/8" x 1" - Oil Drain - Begin Spec "E".
45	504-11	1	Cock, Drain - Oil Drain - 1/2" - Prior to Spec "E".
45	504-30	1	Cock, Drain - Oil Drain - 3/8" - Begin Spec "E".
46	503-197	1	Clamp, Hose - Oil Drain - Prior to Spec "E".
46	503-131	1	Clamp, Hose - Oil Drain - Begin Spec "E".
47	503-94	1	Hose, Oil Drain - 1" O.D. x 3/4" I.D. x 13-1/2" Prior to Spec "E".
47	503-227	13-1/2"	Hose, Oil Drain - 5/8" I.D. - Begin Spec "E".
	167-24	1	Gasket, Copper - Oil Drain Locknut - Begin Spec "E".
	331-68	1	Locknut - 3/8" Pipe - Oil Drain - Begin Spec "E".

FIG. 7 - OIL PUMP, OIL FILTER & RELATED PARTS GROUP (Cont.)

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 8 - MUFFLER & MANIFOLD GROUP

- 1 Manifold, Intake - (FM)B9A-9424-A.
- 2 Plug, Intake Manifold Vacuum Outlet.
- 3 Stud, Intake to Exhaust Manifold.
- 4 Manifold & Thermostat Assembly, Exhaust - (Includes parts marked ▲).
- 5 Bolt, Exhaust Manifold to Intake Manifold.
- 6 Lockwasher.
- 7 Stud, Muffler Inlet Pipe to Exhaust Manifold.
- 8 Nut, Brass.
- 9 Lockwasher.
- 10 Bolt, Intake & Exhaust Manifolds to Cylinder Head.
- 11 Bolt, Intake & Exhaust Manifolds to Cylinder Head.
- 12 Clamp, Intake and Exhaust Manifold to Cylinder Head.
- 13 Gasket, Carburetor to Intake Manifold - 6 Layers.
- 14 ▲Spring, Exhaust Thermostat Control Valve.
- 15 Gasket, Exhaust Manifold to Muffler Inlet Pipe.
- 16 ▲Shield, Exhaust Thermostat Control Valve.
- 17 ▲Pin, Shield to Exhaust Control Valve Shaft.
- 18 Gasket, Intake Manifold to Cylinder Head.
- 19 ▲Valve, Exhaust Thermostat Control.
- 20 ▲Bushing, Exhaust Thermostat Control Valve.
- 21 ▲Pin, Exhaust Thermostat Control Valve Coil Spring.
- 22 ▲Shaft & Counterweight, Exhaust Thermostat Control Valve.
- 23 ▲Spring, Exhaust Thermostat Control Valve Coil.
- 24 Muffler, Exhaust.
- 25 Tube, Exhaust.
- 26 Clamp, Muffler.
- 27 Cover, Exhaust Outlet.
- 28 Adapter, Exhaust Outlet.
- 29 Cover, Exhaust Outlet.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
			FIG. 8 - MUFFLER & MANIFOLD GROUP (Cont.)
29	516-104	1	Pin, Roll - Exhaust Cover - 1/4" x 1-1/4".
30	154P351	1	Gasket, Exhaust Manifold.
31	155B467	1	Tube, Flexible Exhaust.
			NOTE: ▲ - Parts included with Exhaust Manifold.
			FIG. 9 - COOLING SYSTEM & MOUNTING CUSHION GROUP
1	402P129	2	Mount, Generator - Rubber.
1A	403A630	2	Spacer, Generator Mounting Bolt.
2	526A128	4	Spacer, Front Engine Mount - (Replaces 402A128).
3	402A10	2	Mount, Engine Rubber.
4	402A11	2	Mount, Rebound.
4A	526-141	2	Washer, Steel Flat - Beginning Spec L.
5	402A12	2	Cup, Metal.
6	402-55	2	Bolt, Mounting - Used Prior to Spec L - Order 801-81 Bolt, 526-141 Washer, 403A633 Spacer and 870-68 Nut.
6A	801-81	2	Screw, Hex Cap - 7/16-20 x 3-1/2" - Used Beginning Spec L.
6B	403A633	2	Spacer, Mounting - Used beginning Spec L.
7	870-57	2	Nut, Castillated - 7/16"-20 - Used prior to Spec L.
7A	870-68	2	Nut, Huglock - 7/16"-20 - Used beginning Spec L.
8	526-32	2	Washer, Steel Flat.
9	516-40	2	Key, Cotter - Used prior to Spec L.
10	405D927	1	Panel, Front Housing.
11	130D354	1	Radiator.
12	130D350	1	Shroud, Fan.
13	870-113	6	Nut, Tinnerman Speed Grip - (Radiator to Panel).
14	870-106	6	Nut, Tinnerman Speed - (Panel to Radiator Front Side).
15	130P372	1	Cap, Radiator.
16	870-113	6	Nut, Tinnerman Speed Grip - 5/16-18 - (Mount Front Panel to Top Housing Panel).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 9 - COOLING SYSTEM & MOUNTING CUSHION GROUP (Cont.)

17	504-374	1	Cock, Radiator Drain - 1/4" Pipe Thread - Prior to Serial 598400, November 1958.
17	504-28	1	Cock, Radiator Drain - 3/8" Pipe Thread - Begin Serial 598400, November 1958.
18	130C352	1	Guard, Fan - Right Hand.
19	130C351	1	Guard, Fan - Left Hand.
20	130C355	1	Fan.
21	511P41	1	Belt, Fan.
22	511P39	1	Belt, Governor - Charge Generator and Water Pump.
23	130A349	1	Tube, Radiator (Upper) 1-1/2" O.D. x 18 Ga. Steel Tubing.
24	503C278	1	Hose, Radiator (Lower) 1-3/4" I.D. x 2-1/8" Long.
25	503P129	4	Clamp, Hose - (Upper).
26	503-287	2	Clamp, Hose - (Lower).
27	503A3	1	Hose, Radiator Upper Tube - 1-1/2" I.D. x 2-1/2" Long (Replaces #503A88).
27	503-289	1	Hose, Radiator Upper Tube - 1-1/2" I.D. x 3-1/2" Long.

FIG. 10 - STARTING MOTOR & BATTERY CHARGING GENERATOR GROUP

1	191C99	1	Starter, Motor - 12 Volt. - ▲Prior to Spec "G" (Autolite #MCT-6110) For Replacement use #191C313 Starter, #191B301 Relay Assembly.
191P272		1	Spec "G" Models only (Delco Remy #1108177) For Replacement use #191C313 Starter, #191B301 Relay Assembly, #191A76 Spacer and (2) #520A398 Studs.
191P292		1	Spec "H" Models only (Delco Remy #1107764) For Replacement use #191C313 Starter, #191A76 Spacer and (2) #520A398 Studs.
191C313		1	▲Begin Spec "K" (Prestolite # MEO-6004)
1A	191B301	1	Relay Assembly, Start - Begin Spec "H" (Includes mounting bracket plus wire and hardware).
1B	191P293	1	Relay only, Start - Begin Spec "H" (Included in #191B301 Assembly).
307A546		1	Bracket, Start Relay Mounting - Begin Spec "H" (Included in #191B301 Assembly).

▲ - For component parts, check nameplate and order by description from local dealer.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 10 - STARTING MOTOR & BATTERY CHARGING GENERATOR GROUP (Cont.)			
2	191A76	1	Spacer, Starter (Use only with Prestolite (Autolite) Starter).
2	191A273	1	Spacer, Starter (Use only with Delco Remy Starter).
3			▲Generator, Charging - Less Pulley. - Prior to Spec "K" (12 Volt - 18 Amp.).
	191P8	1	Begin Spec "K" (12 Volt - 30 Amp.).
	191C315	1	Stud, Starter Mounting. - Use only with Prestolite (Autolite) Starter.
4	520A398	2	Use only with Delco Remy Starter.
	520A453	2	Bracket, Charging Generator Mounting.
5	191A100	1	Strap, Adjusting.
7	191A101	1	Pulley, Battery Charging Generator. - Prior to Spec "K".
8	191P97	1	Begin Spec "K".
	191C318	1	Regulator, Charge - 12 Volt. - Prior to Spec "K".
9	191-21	1	Begin Spec "K".
	191B316	1	Cable, Battery - Positive.
10	416A49	1	Harness Assembly, Wiring.
10	416A18	1	Lead - #16 Wire - Choke to Charge Regulator.
	338B144	1	▲ - For component parts, check nameplate and order by description from local dealer.
	336A1014	1	
FIG. 11 - IGNITION GROUP			
	(FM)A7A-12000-B	1	Repair Kit, Distributor - Includes Point Set, Rotor and Condenser.
1	185-90	1	Point Set, Distributor - (FM)FAA-12171-A.
2	185-94	1	Rotor, Distributor - (FM)FAA-12200-B.
3	185-97	1	Condenser, Distributor - (FM)7RA-12300-C.
4	185-88	1	Housing, Distributor Terminal - (FM)7HA-12106.

NOTE: Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 11 - IGNITION GROUP (Cont.)

			Bushing, Distributor Housing.
5A	(FM)B8A-12120-A	1	Distributor Assembly - Less Terminal Housing and Rotor.
5A	(FM)B8A-12127-J	1	Wire, Distributor Breaker Ground.
6	(FM)7RA-12264	1	Seal, Wire Terminal Weather at Distributor and Coil.
7	(FM)2N-12113	8	Wire, Hi-Tension - Distributor to Spark Plug #5.
8	(FM)B9TF-12282-A	1	Wire, Hi-Tension - Distributor to Spark Plug #2.
9	(FM)B9TF-12283-A	1	Wire, Hi-Tension - Distributor to Spark Plug #3.
10	(FM)B9TF-12284-A	1	Wire, Hi-Tension - Distributor to Spark Plug #6.
11	(FM)B9TF-12285-A	1	Wire, Hi-Tension - Distributor to Spark Plug #1.
12	(FM)B9TF-12286-A	1	Wire, Hi-Tension - Distributor to Spark Plug #4.
13	(FM)B9TF-12287-A	1	Lead, Hi-Tension - Distributor to Spark Plug #4.
14	167A1290	1	Plug, Ignition (Replaces either #166-92 or #166P259).
15	167-134	6	Bracket, Coil Mounting.
17	166B278	1	Spacer, Bracket - Coil Mounting.
18	166B101	1	Condenser, Ignition Coil - Suppression.
19	166A102	1	Suppressor, Spark Plug - Begin Spec "F".
20	312A15	1	Suppressor, Distributor - Begin Spec "F".
21	314-156	6	
22	314-6	1	

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

FIG. 12A - GOVERNOR PARTS GROUP

1	151C202	1	Governor, Complete - With Pulley - (HOF) #BD-465 - Begin Onan Serial 577787 during Spec. E thru Onan Serial 687064 during Spec. L - ORDER 151C202 Governor
1A	151C152	1	Governor, Complete - With Pulley - Prior to Onan Serial 577787, during Spec "E" - ORDER 151C202 Governor.
2	(HOF)D164-299	1	Body Assembly - Includes body, bearings, rocker shaft and throttle lever - For governor 151C152.
2A	(HOF)D164-537	1	Body Assembly - Includes body, bearings, rocker shaft and throttle lever - For governor 151C179.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
2B	(HOF)D164-731	1	Body Assembly - Includes body, bearings, rocker shaft and throttle lever - For governor 151C202.
3	(HOF)D105-67	1	Lever, Rocker.
4	(HOF)D117-88	1	Lockwasher, Lever to Shaft - For governor 151C152.
5	(HOF)D114-124	2	Screw, Lever to Shaft - For governor 151C152.
5	(HOF)D114-163	2	Screw, Lever to Shaft - Includes Lockwasher - For governors 151C179 and 151C202.
7	(HOF)D114-133	1	Screw, Speed Adjusting.
8	(HOF)D115-29	2	Nut, Adjusting Screw Lock.
9	(HOF)D164-111	1	Lever Assembly, Speed Adjusting - For governor 151C152.
9	(HOF)D105-81	1	Lever, Speed Adjusting - For governors 151C179 and 151C202.
10	(HOF)D129-18	1	Bushing, Speed Adjusting Lever Pivot.
11	(HOF)D117-87	1	Lockwasher, Speed Adjusting Lever to Body.
12	(HOF)D114-106	1	Screw, Speed Adjusting Lever to Body - For governor 151C152.
12	(HOF)D114-179	1	Screw, Speed Adjusting Lever to Body - For governors 151C179 and 151C202.
13	(HOF)D104-112	1	Link and Bearing, Spring - For governor 151C152 - (Replaces D164-172).
13	(HOF)D105-127	1	Link, Spring - For governors 151C179 and 151C202.
14	(HOF)D117-86	2	Washer, Sensitivity Screw - For governor 151C152.
14	(HOF)D117-46	1	Washer, Sensitivity Screw - For governors 151C179 and 151C202.
15	(HOF)D117-87	1	Lockwasher, Sensitivity Screw.
16	(HOF)D110-57	1	Spring, Speed Adjusting - (120# Rate) - For governor 151C152 use 2.
17	(HOF)D132-81	1	Screw, Sensitivity Adjusting - For governor 151C152.
17	(HOF)D132-83	1	Screw, Sensitivity Adjusting - For governor 151C152.
18	(HOF)D165-33	1	Retainer, Link to Sensitivity Adjusting Screw (Replaces D165-18) For governors 151C152 and 151C179.
18	(HOF)D165-18	1	Retainer, Link to Sensitivity Adjusting Screw - For Governor 151C202.
19	(HOF)D164-301	1	Shaft Assembly, Main - Complete - For governor 151C152.
19	(HOF)D164-538	1	Shaft Assembly, Main - Complete - For governor 151C179.
19	(HOF)D164-729	1	Shaft Assembly, Main - Complete - For governor 151C202.
20	(HOF)D164-227	1	Shaft and Yoke, Main - For governor 151C152.
20	(HOF)D164-514	1	Shaft and Yoke, Main - For governor 151C179.
20	(HOF)D164-717	1	Shaft and Yoke, Main - For governor 151C179.
21	(HOF)D164-223	1	Bearing and Sleeve, Thrust - For governor 151C152.
21	(HOF)D164-393	1	Bearing and Sleeve, Thrust - For governors 151C179 and 151C202.
22	(HOF)D164-106	2	Flyweight - For governor 151C152.

FIG. 12A - GOVERNOR PARTS GROUP (Cont.)

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 12A - GOVERNOR PARTS GROUP (Cont.)

22	(HOF)D164-476	2	Flyweight - For governors 151C179 and 151C202.
23	(HOF)D132-88	2	Pin, Flyweight Pivot - For governors 151C152 and 151C179.
23	(HOF)D132-148	2	Pin, Flyweight Pivot - For governor 151C202.
24	(HOF)D165-17	4	Retainer, Flyweight Pivot Pin - For governors 151C152 and 151C179.
24	(HOF)D165-56	4	Retainer, Flyweight Pivot Pin - For governor 151C202.
25	(HOF)D133-22	1	Bearing, Front - Main - For governors 151C152 and 151C179.
25	(HOF)D133-3	1	Bearing, Front - Main - For governor 151C202.
26	(HOF)D132-43	1	Pin, Pulley to Shaft.
27	(HOF)D107-37	1	Gasket, Cover to Body - For governor 151C152 - (Replaces D107-49).
27	(HOF)D107-68	1	Gasket, Cover to Body - For governors 151C179 and 151C202.
28	(HOF)D164-229	1	Cover and Seal - For governor 151C152.
28	(HOF)D164-513	1	Cover and Seal - For governor 151C179.
28	(HOF)D164-712	1	Cover and Seal - For governor 151C202.
28A	(HOF)D108-3	1	Seal, Oil Cover - For governors 151C152 and 151C179.
28A	(HOF)D108-24	1	Seal, Oil Cover - For governor 151C202.
29	(HOF)D174-105	1	Pulley, Drive.
30	(HOF)D117-60	4	Lockwasher, Cover to Body.
31	(HOF)D114-63	4	Screw, Cover to Body.
32	(HOF)D165-22	1	Retainer, Main Bearing to Cover - For governor 151C152.
33	(HOF)D165-21	2	Retainer, Main Bearing to Shaft - For governors 151C152 and 151C179.
33	(HOF)D165-36	2	Retainer, Main Bearing to Shaft - For governor 151C202.
34	(HOF)D133-14	1	Bearing, Rear Main.
35	(HOF)D110-73	1	Spring, Throttle Lever Tension - For governors 151C179 and 151C202.
36	(HOF)D183-3	1	Oiler, Inlet - For governors 151C152 and 151C179.
36	(HOF)D183-2	1	Oiler, Inlet - For governor 151C202.
37	(HOF)D183-4	1	Oiler, Oil Level - For governors 151C152 and 151C179.
37	(HOF)D183-1	1	Oiler, Oil Level - For governor 151C202.
38	(HOF)D120-11	1	Tag, Oil Level.
38	(HOF)D117-85	1	Washer, Spring Link Spacing - For governors 151C179 and 151C202.
39	(HOF)D114-163	1	Screw and Lockwasher, Main Bearing to Cover - For governors 151C179 and 151C202.
40	(HOF)D117-160	1	Washer, Main Bearing to Cover Screw - For governor 151C202.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
41	(HOF)D164-120	1	Screw Assembly, Bumper - For governors 151C152 and 151C179 - (NOTE: Remains inoperative for most applications.
41	(HOF)D164-59	1	Screw Assembly, Bumper-For governor 151C202-(NOTE:Remains inoperative for most applications.
42	151B149	1	Bracket, Governor Mounting.
43	520A214	1	Stud, Governor Linkage - 1/4-28 Thread.
44	150A638	1	Joint, Ball.
FIG. 12A - GOVERNOR PARTS GROUP (Cont.)			
1	307B259	1	FIG. 12B - ANTI-DIESELING CONTROL GROUP (BEGIN SPEC "F" or serial # 587538) (EXCEPTION! - This control is not used on certain gas fueled units which have a solenoid valve in the fuel supply line).
2	145A164	1	Solenoid - Includes Lead and Plunger - (See NOTE).
3	516-103	1	Arm, Solenoid Extension.
4	516-86	1	Pin, Roll -
4	526A8	1	1/8 x 1/2 - Arm to Solenoid - Prior to Spec K.
5	142-113	1	1/8 x 3/4 - Cam to Solenoid - Begin Spec K.
6	516-59	1	Washer, Flat - Solenoid Extension Arm Spacing.
7	815-104	1	Swivel, Linkage to Solenoid Extension Arm.
8	145A166	1	Pin, Cotter - Hair Pin Type.
9	145A165	2	Screw, Fillister Head - #8-32 x 5/16".
10	803-2	2	Link, Wire - Anti-dieseling Control to Carburetor.
11	145A163	1	Stop, Wire - Excludes Set Screw.
12	145A158	1	Screw, Set - Socket Head - #8-32 x 3/16" - Wire Stop.
13	150A96	1	Arm, Throttle Over-ride - Slotted.
14	145A120	1	Spring, Throttle Over-ride.
15	145C182	1	Stud, Adjusting - Over-ride Spring.
16	815-110	1	Gasket, Solenoid Mounting Bracket - Lead material necessary to avoid carburetor icing.
18	309A155	1	Bracket, Solenoid and Spring Mounting.
19	309P133	1	Screw, Fillister Head (#10-32 x 7/8) Throttle Shaft Adjusting.
20	309A132	1	Switch, Micro - Begin Spec K.
21	309A131	1	Actuator - Begin Spec K.
			Cam, Switch - Begin Spec K.
			Bracket, Micro Switch - Begin Spec K.

NOTE: Use a tooth type washer to mount each part to provide good electrical ground to engine.

PARTS LIST

37

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
1	140B379	1	Cleaner, Air.
2	123B683	1	Tube, Breather - Includes Adapter (Replaces 123B477).
3	503-136	1	Hose, Breather.
4	501B10	1	Line, Flexible Fuel - 42" - Mounted Fuel Tank to Pump (Replaces two earlier 24" lines).
5	159D490	1	Tank, Fuel - Mounted, 20 U.S. Gallon - Housed Plant only - Optional - Excludes Strap.
6	159B512	1	Cap & Indicator, Mounted Fuel Tank.
7	504P4	1	Valve, Shut-off, - Use with Mounted Fuel Tank.
8	502-2	2	Elbow, Inverted Male - Use with Mtd Fuel Tank - Replaces 502-3 & 502-53 used on early mdls.
9	159D489	1	Strap, Mounted Fuel Tank Hold-down - Also appears in Housing Group.
10	503-131	2	Clamp, Breather Hose.
11	502-3	1	★Connector, Inverted Male - Flex Line to Valve - Not used with 502-2 Elbow.
12	502-53	1	★Elbow, 45° Street - Solenoid Valve Inlet - Use 502-2 Elbow.
13	502-82	1	★Nipple, Hex - Brass Pipe - Solenoid Mounting.
14	307P565	1	★Valve, Solenoid Fuel.
15	416A96	1	★Clip, Fuel Line - Not needed.
16	159P751	1	Gasket, Gas Tank Filler Neck.

★ - Components for X-ray Units Only.

FIG. 14 - FUEL PUMP GROUP

(FM)B8A-9350-E	1	▲Pump Assembly, Fuel.
(FM)B7A-9349-A	1	Kit, Fuel Pump Repair Parts - Includes items marked "c" and not sold separately.
1	2	c. Valve and Cage, Fuel Pump.
2	1	c. Gasket, Fuel Pump Filter Bowl.
3	1	c. Diaphragm, Fuel Pump Pulsator.
4	1	c. Pin, Fuel Pump Rocker Arm Pivot.
5	2	c. Plug, Fuel Pump Pivot Pin.
6	1	c. Spring, Fuel Pump Rocker Arm.
7	1	c. Link, Fuel Pump.
8	1	c. Spring, Fuel Pump Diaphragm.
9	1	c. Diaphragm, Fuel Pump - Includes Pull Rod.
10	2	c. Gasket, Fuel Pump Valve and Cage.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
11	(FM)B5A-9417-A	1	c. Gasket, Fuel Pump Mounting - Supplied separately.
12		1	c. Retainer, Fuel Pump Pull Rod Seal.
13	(FM)20366-S8	1	c. Seal, Oil - Fuel Pump Pull Rod.
14	(FM)34806-S7	2	Bolt, Fuel Pump to Cylinder Block.
15	(FM)31628-S7	2	Lockwasher.
16	(FM)34803-S7	6	Screw, Body Assembly.
17	(FM)B5A-9355-A	1	Bowl, Fuel Pump Filter - Glass.
18	(FM)B7A-9365-A	1	Strainer, Fuel Pump Filter Bowl.
19	(FM)7RA-9371	1	Retainer, Diaphragm Spring.
20	(FM)B5A-9372-A	1	Plate, Pulsator Cover.
21	(FM)B5A-9376-B	1	Arm, Fuel Pump Rocker.
22	(FM)EAA-9387-A	1	Bail Assembly, Fuel Pump Filter Bowl.
23			

FIG. 14 - FUEL PUMP GROUP (Cont.)

11	(FM)B5A-9417-A	1	c. Gasket, Fuel Pump Mounting - Supplied separately.
12		1	c. Retainer, Fuel Pump Pull Rod Seal.
13	(FM)20366-S8	1	c. Seal, Oil - Fuel Pump Pull Rod.
14	(FM)34806-S7	2	Bolt, Fuel Pump to Cylinder Block.
15	(FM)31628-S7	2	Lockwasher.
16	(FM)34803-S7	6	Screw, Body Assembly.
17	(FM)B5A-9355-A	1	Bowl, Fuel Pump Filter - Glass.
18	(FM)B7A-9365-A	1	Strainer, Fuel Pump Filter Bowl.
19	(FM)7RA-9371	1	Retainer, Diaphragm Spring.
20	(FM)B5A-9372-A	1	Plate, Pulsator Cover.
21	(FM)B5A-9376-B	1	Arm, Fuel Pump Rocker.
22	(FM)EAA-9387-A	1	Bail Assembly, Fuel Pump Filter Bowl.
23			

NOTE: ▲ Generating plants with the following Ford Motor Co. Engine Serial Numbers use Fuel Pump Assembly Number (FM)EAA-9350-E: 781-E16CA, 834-E16CA, 836-E16CA, 837-E16CA, 855-E16CA, 856-E16CA, 858-E16CA.

FIG. 15 - CARBURETOR GROUP (GASOLINE)

141C575	1	Carburetor - Zenith - with 12-volt Electric Choke - For Gasoline Fuel only - Includes Reference #1 thru 62.
141-563	1	Kit, Carburetor Repair Parts - (Includes Parts Marked "d").
(Z)C181-300	1	Kit, Carburetor Gasket - (Includes Parts Marked "e").
(Z)C136-3	2	d. Screw, Choke Plate.
141-532	1	Plate, Choke.
3	1	Body, Air Intake - NOT SOLD SEPARATELY.
4 (Z)CR9-26	1	Bushing, Shaft Thrust.
5 141-533	1	Head, Filter.
6 141-534	1	d. e. Washer, Filter Head Fibre.

Note - Order Ford Parts from your local FORD Dealer, giving description of part and complete FORD Engine Nameplate data.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
7	(Z)C105-37	1	Shaft, Choke.
8	141-566	1	Element, Fuel Filter.
9	141-537	6	d.Screw, Intake Body.
10	141A77	1	d.e.Washer, Valve Seat Fibre.
11	141-323	1	d.Valve & Seat, Fuel - (Not used with optional "Day" Tank) - Size 40.
11	141-318	1	Valve & Seat, Fuel - (Models with optional "Day" Tank) - Size 50.
12	141-8	1	Needle, Idle Adjusting.
13	141-9	1	Spring, Adjusting Needle.
14	141-199	1	d.e.Washer, Channel Plug Fibre.
15	(Z)C138-5	1	Plug, Vacuum Cylinder Channel.
16	141-535	1	Float, Gasoline Fuel Only.
17	141-72	1	d.Axle, Float (Replaces #141-206).
18	141-536	1	d.e.Gasket, Intake Body to Bowl.
19	141-544	1	Plug, P.J. Valve Channel.
20	(Z)C56-3-12	1	d.Jet, Idle.
21	141-542	1	Plug, Accelerator Jet Passage.
22	141-541	1	Jet, Accelerator - (Blank).
23	141-556	1	d.Jet, Well Vent.
24	141-538	1	Bowl, Fuel - NOT SOLD SEPARATELY.
25	141-546	2	d.Screw, Bowl Assembly.
26	141-540	1	d.Bushing, Idle Channel.
27	141-597	1	Venturi-Gasoline Fuel Only.
28	141-539	4	d.Plug, Bowl Channel.
29	141-70	1	Plug, 1/8" Pipe - (Bowl Drain).
30	(Z)C66-70-1-70	1	Jet, Discharge.
31	141A77	1	d.e.Washer, Adjustment Fibre.
32	(Z)C71-26-35	1	Jet & Adjustment, Main.
33	141-545	1	d.e.Gasket, Bowl to Throttle Body.
34	810-41	2	d.Screw, Throttle Plate - (Replaces 141-68) - (Z)T15B5-3.
35	853-3	2	d.Lockwasher, Plate Screw - (Replaces 141-381).
36	141-551	1	Plate, Throttle.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
37	141-669	1	Body Assembly, Throttle (Body not sold separately) - (Z)B12-87C-1.
38	141-580	2	Washer, Oil Retainer - Inner - (Z)CT57-3.
39		1	Bearing, Needle - Rear - Order 141-669 Throttle Body Assembly.
40		1	Bearing, Needle - Front - Order 141-669 Throttle Body Assembly.
41	141-581	1	Seal, Throttle Shaft - Front - (Z) CT48-9.
42		1	Washer, Seal Retainer - Front - Order 141-669 Throttle Body Assembly.
43		1	Shaft, Throttle - Order 141-669 Throttle Body Assembly.
44		1	Lever, Throttle Stop - Order 141-669 Throttle Body Assembly.
45	141-255	1	Spring, Stop Screw.
46		1	Screw, Lever Stop - Order 141-669 Throttle Body Assembly.
47		1	Shaft and Stop Lever Assembly, Throttle - Order 141-669 Throttle Body Assembly.
48	(Z)CT63-2	1	g. Taper Pin - Stop Lever.
49	141-2	1	Screw, Lever Clamp.
50	141-645	1	Lever, Throttle Clamp - (Z)C24-11DNX2 - (Replaces Zenith No. C24-7DGX2).
51	154A133	1	d. Gasket, Flange - (1) Carburetor to Star Flange.
51	154A133	1	Gasket, Flange - (1) Star Flange to Manifold.
52-62	141-599	1	Choke, 12 Volt Electric with Vacuum Over-ride - Complete.
52	141-592	1	d. e. Gasket, Choke Housing to Carburetor Intake Body.
53	(Z)C163-15A	1	Housing, Choke.
54	(Z)C138-44	1	Plug, Vacuum Cylinder - Choke.
55	(Z)C35-17	1	Piston & Rod, Vacuum - Choke.
56	(Z)T43-104	1	Lockwasher, Shaft Nut - Choke.
57	(Z)T25S-1	1	Nut, Choke Shaft.
58	(Z)C140-36	2	Screw, Choke Housing.
59	(Z)T44-6	1	Plate, Housing Baffle - Choke.
60	141-591	1	d. e. Insulator, Housing - (Cork) - Choke.
61	141-646	1	Cover & 12 Volt Element - Choke (Replaces Zenith no. C165-4).
62	(Z)C140-12	3	Screw, Cover Assembly - Choke.
63	502-2	1	Elbow, Inverted Male - Not used with "Day" Tank - (Not part of Carburetor Assembly).
64	141A372	1	Knob, Choke Shaft - (Not part of Carburetor Assembly).
65	148B439	1	Flange, Star - Adapts carburetor to manifold - (Not part of Carburetor Assembly).

FIG. 15 - CARBURETOR GROUP (GASOLINE) Cont.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
66	149A619	1	Line, Fuel - Pump to Carburetor - (Not part of Carburetor Assembly).
67	502-2	1	Elbow, Inverted Male (Fuel Pump Outlet) - (Not part of Carburetor Assembly).
68	520A235	2	Stud, Carburetor Mounting - (Not part of Carburetor Assembly) 3/8 x 1-3/8" - Prior to Spec "F".
68	520A434	2	Stud, Carburetor Mounting - (Not part of Carburetor Assembly) 3/8 x 1-11/16" - Begin Spec "F".
141-543		1	Plug, Pump Rod Channel.

FIG. 15 - CARBURETOR GROUP (GASOLINE) Cont.

148A400	1	Converter, LPG - (Used only with Combination Gas-Gasoline Carburetor and Heat Exchanger).
148-115	1	Regulator, Gas - (Used with Combination Gas-Gasoline Carburetor).
505-4	1	Nipple, Pipe - Close - (Gas Intake) - 1".
505-41	2	Elbow, Pipe - (Gas Intake) - 1" x 90°.
505-147	1	Nipple, Pipe - (Gas Intake) - 1" x 3-1/2".
505-128	1	Bushing, Pipe - Reducer - (Gas Outlet) - 1-1/4 x 3/8".
505-101	1	Nipple, Pipe - Close - (Gas Outlet) - 3/8".
505-39	1	Elbow, Pipe - (Gas Outlet) - 3/8" x 90°.
505-135	1	Nipple, Pipe - Half - (Gas Outlet) - 3/8".
503P386	37 inches	Hose, Rubber - 5/8" I.D. - Gas Regulator to Carburetor - Replaces 503P188.
503-131	2	Clamp, Hose - 7/8".
148A107	1	Vent, Regulator.
800-26	2	Screw, Hex Head Steel Machine - 5/16-18 x 3/4" (Regulator Mounting).
141C593	1	Carburetor Assembly - Combination Gas-Gasoline - with 12 volt Electric Choke - Excludes Choke Adapter - (Includes parts marked "h").
141C595	1	Carburetor Assembly - GAS ONLY - Excludes parts marked "h" except includes Venturi.
504-7	1	h. Cock, Shut-off.
148A17	1	h. Gasket, Bushing - 1/32" Hard Fibre - Float Lock - Used only on early models with Float Lock.
148A135	1	h. Lock, Carburetor Float - Used only on early models - Not needed - Replace with 141-70 plug.
148A251	1	h. Adapter Assembly, Gas - Includes adjusting screws and hose connection.

FIG. 16 - SPECIAL FUEL SYSTEM GROUP (COMBINATION GAS-GASOLINE) and (GAS ONLY).

NOTE: For carburetor parts not shown in this group, refer to parts shown in Gasoline Carburetor Group. Plumbing and hardware parts special for LPG fueled units are not listed.

148-074

1	1	1
2	1	Regulator, Gas - (Used with Combination Gas-Gasoline Carburetor).
3	1	Nipple, Pipe - Close - (Gas Intake) - 1".
4	2	Elbow, Pipe - (Gas Intake) - 1" x 90°.
5	1	Nipple, Pipe - (Gas Intake) - 1" x 3-1/2".
6	1	Bushing, Pipe - Reducer - (Gas Outlet) - 1-1/4 x 3/8".
7	1	Nipple, Pipe - Close - (Gas Outlet) - 3/8".
8	1	Elbow, Pipe - (Gas Outlet) - 3/8" x 90°.
9	1	Nipple, Pipe - Half - (Gas Outlet) - 3/8".
10	1	Hose, Rubber - 5/8" I.D. - Gas Regulator to Carburetor - Replaces 503P188.
11	2	Clamp, Hose - 7/8".
12	1	Vent, Regulator.
13	2	Screw, Hex Head Steel Machine - 5/16-18 x 3/4" (Regulator Mounting).
14	1	Carburetor Assembly - Combination Gas-Gasoline - with 12 volt Electric Choke - Excludes Choke Adapter - (Includes parts marked "h").
141C595	1	Carburetor Assembly - GAS ONLY - Excludes parts marked "h" except includes Venturi.
504-7	1	h. Cock, Shut-off.
148A17	1	h. Gasket, Bushing - 1/32" Hard Fibre - Float Lock - Used only on early models with Float Lock.
148A135	1	h. Lock, Carburetor Float - Used only on early models - Not needed - Replace with 141-70 plug.
148A251	1	h. Adapter Assembly, Gas - Includes adjusting screws and hose connection.

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 16 - SPECIAL FUEL SYSTEM GROUP (COMBINATION GAS-GASOLINE) and (GAS ONLY) Cont.			
19	140-62	1	Cleaner, Air.
20	140A80	2	Band, Air Cleaner.
21	503P151	As Req.	Hose, Air Cleaner - Wiremold - 2-1/4" I.D. (6" used Prior to Spec "H", 11" used Begin Spec "H")
22	503-274	2	Specify size required.
23	148B441	1	Adapter Assembly, Choke - Includes Valve and Counterweight (Replaces #148B214).
24	140B502	1	Bracket, Air Cleaner Mounting (Replaces #140B393) - Prior to Spec "H".
24	140B547	1	Bracket, Air Cleaner Mounting - Begin Spec "H".
25	145A253	1	Inlet Assembly, Carburetor Air (Replaces Horn Assembly 140A395).
28	148A272	1	Tube, Gas Inlet - Hose Connection.
29	148A198	1	h. Gasket, Thin - Gas Adapter to Throttle Body.
30	141A372	1	Gasket, Thick - Bowl to Gas Adapter - Refer to Gasoline Carburetor Group.
31	308P5	1	Knob, Choke Shaft.
32	308-150	1	Switch, Fuel Selector - Gas or Gasoline - Use Began During Spec "J".
33	307P615	1	Bracket, Fuel Selector Switch - Use Began During Spec "J".
34	141A493	1	Primer Assembly, Solenoid - Begin Spec K.
34	141A598	1	h. Float, Carburetor - With provision for Float Lock contact.
34	520A577	2	h. Venturi, Carburetor - With entry holes for gas fuel.
34	148B281	1	Stud, Air Cleaner Bracket - 7/16 x 5-1/4" - Prior to Spec "H".
34	148B282	1	Bracket, Converter Mounting - For LPG fueled units.
34	148A274	1	Brace, Converter Mounting - For LPG fueled units.
34	503-197	2	Bracket, Hose Mounting - For LPG fueled units.
34	503-44	2	Clamp, Hose - Wire, 1".
			Clamp, Hose - Wire, 2-3/8".
FIG. 17 - DAY TANK (OPTIONAL EQUIPMENT)			
1	502-82	1	Nipple, Hex - Solenoid Valve to Tank - Begin Spec "H".
2	159B294	1	Tank, Reservoir.
3	159A121	1	Band, Reservoir Tank.
4	140B502	1	Bracket, Reservoir Tank Mounting - (Replaces #140B393) - Prior to Spec "H".
4	140B547	1	Bracket, Reservoir Tank Mounting - Begin Spec "H".
5	502-24	2	Elbow, Male Compression - (1) Tank Inlet, (1) Vent Line to Tank NOTE: Quantity is 1 for Tank Outlet Begin Spec "H".

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
6	505-17	1	Bushing, Pipe - Prior to Spec "H".
7	504A39	1	Cock, Shut-off - With Strainer - Prior to Spec "H".
8	505-57	2	Plug, Pipe - Tank - (Replaces Plug 505-12) - NOTE: Quantity is 1 Prior to Spec "H".
9	800-5	2	Screw, Hex Head Machine - 1/4-20 x 3/4".
10	862-1	2	Nut, Hex - 1/4-20.
11	850-40	2	Washer, Lock - 1/4".
12	502-116	1	Connector, Vent Line Compression - With Nut & Sleeve - 1/8" Pipe Thread- Prior to Spec "H".
13	505-28	1	Coupling, Vent Line - 3/8" - Prior to Spec "H".
14	505-16	1	Bushing, Vent Line Reducer - 3/8" to 1/8" - Prior to Spec "H".
15	159A345	1	Tubing, Copper - Vent Line (12 feet x 5/16" O.D.) - Prior to Spec "H".
16	159-41	1	Cap, Tank Vent - Prior to Spec "H".
17	415A55	1	Bracket, Vent Cap - Prior to Spec "H".
18	149C606	1	Line, Fuel - Pump to Day Tank - Prior to Spec "H".
18	159A716	1	Line, Fuel - Pump to Day Tank - Begin Spec "H".
18	159A526	1	Line, Fuel - Day Tank to Carburetor - Prior to Spec "F".
18	159A667	1	Line, Fuel - Day Tank to Carburetor - Spec "F" and "G" Models.
18	159A715	1	Line, Fuel - Day Tank to Carburetor - Begin Spec "H".
19	141-318	1	Valve and Seat, Fuel - Carburetor - Size 50 displaces size 40 for full power with Day tank - Prior to Spec "H".
20	307P565	1	Valve, Solenoid - Reservoir Tank - Begin Spec "H".
21	159A705	1	Reducer, Restricted - Reservoir Tank Return Line Outlet - Begin Spec "H".
22	502-128	1	Elbow, Male Compression - Reservoir Tank Inlet - Begin Spec "H".
23	501A5	1	Line, Fuel - Flexible - 18-1/2" - Reservoir Tank Return - Begin Spec "H".
24	502-2	1	Elbow, Inverted Male - Reservoir Tank Return Line Outlet - Begin Spec "H".

FIG. 17 - DAY TANK (OPTIONAL EQUIPMENT) Cont.

1	505-17	1	Bushing, Pipe - Prior to Spec "H".
1	504A39	1	Cock, Shut-off - With Strainer - Prior to Spec "H".
2	505-57	2	Plug, Pipe - Tank - (Replaces Plug 505-12) - NOTE: Quantity is 1 Prior to Spec "H".
2	800-5	2	Screw, Hex Head Machine - 1/4-20 x 3/4".
2	862-1	2	Nut, Hex - 1/4-20.
2	850-40	2	Washer, Lock - 1/4".
1	502-116	1	Connector, Vent Line Compression - With Nut & Sleeve - 1/8" Pipe Thread- Prior to Spec "H".
1	505-28	1	Coupling, Vent Line - 3/8" - Prior to Spec "H".
1	505-16	1	Bushing, Vent Line Reducer - 3/8" to 1/8" - Prior to Spec "H".
1	159A345	1	Tubing, Copper - Vent Line (12 feet x 5/16" O.D.) - Prior to Spec "H".
1	159-41	1	Cap, Tank Vent - Prior to Spec "H".
1	415A55	1	Bracket, Vent Cap - Prior to Spec "H".
1	149C606	1	Line, Fuel - Pump to Day Tank - Prior to Spec "H".
1	159A716	1	Line, Fuel - Pump to Day Tank - Begin Spec "H".
1	159A526	1	Line, Fuel - Day Tank to Carburetor - Prior to Spec "F".
1	159A667	1	Line, Fuel - Day Tank to Carburetor - Spec "F" and "G" Models.
1	159A715	1	Line, Fuel - Day Tank to Carburetor - Begin Spec "H".
1	141-318	1	Valve and Seat, Fuel - Carburetor - Size 50 displaces size 40 for full power with Day tank - Prior to Spec "H".
20	307P565	1	Valve, Solenoid - Reservoir Tank - Begin Spec "H".
21	159A705	1	Reducer, Restricted - Reservoir Tank Return Line Outlet - Begin Spec "H".
22	502-128	1	Elbow, Male Compression - Reservoir Tank Inlet - Begin Spec "H".
23	501A5	1	Line, Fuel - Flexible - 18-1/2" - Reservoir Tank Return - Begin Spec "H".
24	502-2	1	Elbow, Inverted Male - Reservoir Tank Return Line Outlet - Begin Spec "H".

FIG. 18 - AUTOMATIC VOLTAGE REGULATOR GROUP
(Used only on Models Prior to Spec "J")

1	305P59	1	Unit, Regolm Plug-in.
2	305C137	1	Base Assembly, Voltage Regulator.
3	312A58	1	Condenser - .1Mfd. - Works for 312A35 - (Replaces 312A15).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 19 - GENERATOR GROUP (Alternator Portion)

1 231D65 1 Adapter, Generator Alternator to Engine.
 232A1186 1 Holder, Bearing Anti-Rotation.
 232A1187 1 Spring, Bearing Holder.
 232C1260 1 Scroll, Air.
 232C1193 1 Band, Alternator Stator - For Single Phase Plants.
 232C1199 1 Band, Alternator Stator - For Three Phase Plants.
 515-130 1 Key, Exciter Armature - Prior to Spec "J".
 232B1253 2 Cover, Screened - Air and Hand Hole - Includes Latch.
 234B20 1 Cover, Output Lead Hole - Includes Grommet.
 520A152 6 Stud, Alternator Stator to Adapter - 3/8" x 7-7/8".
 520A528 6 3/4"NC x 3/4"NF (X-ray Only).
 520A528 6 3/4"NC x 7/8"NF
 Screw, Drive Disc to Flywheel.
 800-27 6 Prior to Spec "J" - 5/16-18 x 7/8" (Also Used On All X-ray Models).
 232A1238 6 Begin Spec "J" - 5/16-18 x 1".
 232B1254 2 Cover, Hand Hole - Includes Latch and Bracket.
 ★ 13 1 Rotor, Alternator - Includes Drive Disc.
 205B54 1 Blower.
 510P63 1 Bearing, Ball - Double Sealed - Pre-Lubricated.
 212C194 1 Rig Assembly, Brush - Alternator Slip Ring - Includes Brushes and Springs.
 212C248 1 Prior to Spec "J" (Also Used On All X-ray Models).
 ★ 13 1 Begin Spec "J".
 211E96 1 Bell, Exciter to Alternator End.
 211E131 1 Prior to Spec "J" (Also Used On All X-ray Models).
 ★ 17A 1 Begin Spec "J".
 ★ 18 1 Stator Assembly - Windings and Laminations.
 212B1105 4 Spring, Brush - Constant Pressure Type - Alternator.
 214A46 4 Brush, Alternator Collector Ring.
 214A56 4 Prior to Spec J.
 232A1205 1 Washer, Centering - Armature Thru Screw - Prior to Spec "J".
 ★ 21 1 - Order by description, giving Model, Spec and Serial Number (ONAN Nameplate).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
22	312A15	1	Condenser - 0.1 Mfd. - Alternator Suppression.
23	336A943	1	Jumper, Wire - Alternator Brush Rig.
24	150A717	1	Switch Assembly, Overspeed - Rotating Member (Begin Spec "J").

FIG. 19 - GENERATOR GROUP (Alternator Portion) Cont.

★ 312C1141 1 Condenser - 0.1 Mfd. - Alternator Suppression.
 ★ 212C1143 1 Jumper, Wire - Alternator Brush Rig.
 ★ 212C1142 1 Switch Assembly, Overspeed - Rotating Member (Begin Spec "J").

FIG. 20 - GENERATOR GROUP (Rotating Exciter Portion) Prior to Spec "J"

1	★ 212C1141	1	Armature Assembly, Exciter.
2	★ 515-130	1	Frame Only, Exciter - Includes no other part.
3	212C1143	1	Holder, Brush Rig.
4	212C1142	1	Holder, Brush Rig - For X-ray Models Only.
5	★ 212B1105	1	Clamp, Brush Rig.
6	★ 212B1011	4	Poleshoe, Exciter.
7	212C197	4	Coil Assembly, Exciter Field - Set of 4 Coils.
8	212C246	4	Key, Exciter Armature - Also listed in Alternator Group.
9	212B1105	4	Rig Assembly, Brush - Commutator - Includes Brushes and Springs.
10	214A44	4	For All Models except X-ray.
11	214A48	4	For X-ray Models Only.
12	211C92	1	Cover, Exciter.
13	312A17	1	Condenser, 0.5 mfd - Suppression.
14	150A589	1	Bracket, Overspeed Switch Contact - Includes Contact.
	150A626	1	For All Models Except X-ray.
	336A193	1	For X-ray Models Only.
	336A629	1	Jumper, Brush Rig.
			For All Models Except X-ray.
			For X-ray Models Only.

★ - Order by description, giving Model, Spec, and Serial Number (ONAN Nameplate).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
15	336A1082	1	Lead, Overspeed Switch.
16	232A1205	1	Washer, Centering - Armature Thru Screw - Also listed in Alternator Group.
17	150A548	1	Switch Assembly, Overspeed - Rotating Member (Prior to Spec "J").

FIG. 20 - GENERATOR GROUP (Rotating Exciter Portion) Prior to Spec "J" (Cont.)

15	336A1082	1	Lead, Overspeed Switch.
16	232A1205	1	Washer, Centering - Armature Thru Screw - Also listed in Alternator Group.
17	150A548	1	Switch Assembly, Overspeed - Rotating Member (Prior to Spec "J").
1	234D106	1	Cover, Exciter.
2	520A575	3	Stud, Exciter Cover Mounting.
3	234D105	1	Panel Only, Exciter.
4	305B200	1	Rectifier Assembly, Power (Complete).
5	305-199	4	Rectifier Only, Power (Field).
7	150A733	1	Bracket Only, Overspeed Switch.
8	232A1365	1	Stud and Contact Point Assembly, Voltage Control Reactor Mounting.
9	508-18	2	Washer, Fibre Insulating - Voltage Control Reactor.
	508-29	1	1/4 x 3/4 x 1/16".
		1	1/4 x 3/8 x 1/32".
10	315A74	1	Reactor, Voltage Control - Does not include terminal block.
11	332A687	1	Block, Terminal - Voltage Control Reactor.
12	305B202	1	Rectifier Assembly, Resistor and (Includes parts marked † plus wire and hardware).
13	234B60	2	† Bracket, Gate Reactor Mounting (Note: 1 only included in #305B202 Assembly).
14	304A5	1	† Resistor, Control - Adjustable (150 Ohm, 25 Watt - 9/16" x 2").
15	520A579	2	† Stud, Resistor and Rectifier Mounting (Note: 1 only included in #305B202 Assembly).
16	232A1473	2	† Spacer, Adjustable Resistor and Rectifier to Stud (3/8" O.D. x 3/16" I.D. x 7/32" Long).
17	304A14	2	Washer, Centering - Adjustable Resistor Mounting.
18	305P208	4	† Rectifier, Regulator (Control).
19	315A47	2	Reactor, Gate.
20	234B62	2	Retainer, Gate Reactor.
21	232A1361	2	Stud, Gate Reactor Mounting.
22	304A21	1	Resistor, Fixed - Alternator Field (200 Ohm, 50 Watt - 3/4" x 4").
23	304A15	2	Washer, Centering - Fixed Resistor Mounting.
24	332A604	1	Block, Terminal - 5 Place.

FIG. 21 - GENERATOR GROUP (Static Exciter Portion) Begin Spec "J"

1	234D106	1	Cover, Exciter.
2	520A575	3	Stud, Exciter Cover Mounting.
3	234D105	1	Panel Only, Exciter.
4	305B200	1	Rectifier Assembly, Power (Complete).
5	305-199	4	Rectifier Only, Power (Field).
7	150A733	1	Bracket Only, Overspeed Switch.
8	232A1365	1	Stud and Contact Point Assembly, Voltage Control Reactor Mounting.
9	508-18	2	Washer, Fibre Insulating - Voltage Control Reactor.
	508-29	1	1/4 x 3/4 x 1/16".
		1	1/4 x 3/8 x 1/32".
10	315A74	1	Reactor, Voltage Control - Does not include terminal block.
11	332A687	1	Block, Terminal - Voltage Control Reactor.
12	305B202	1	Rectifier Assembly, Resistor and (Includes parts marked † plus wire and hardware).
13	234B60	2	† Bracket, Gate Reactor Mounting (Note: 1 only included in #305B202 Assembly).
14	304A5	1	† Resistor, Control - Adjustable (150 Ohm, 25 Watt - 9/16" x 2").
15	520A579	2	† Stud, Resistor and Rectifier Mounting (Note: 1 only included in #305B202 Assembly).
16	232A1473	2	† Spacer, Adjustable Resistor and Rectifier to Stud (3/8" O.D. x 3/16" I.D. x 7/32" Long).
17	304A14	2	Washer, Centering - Adjustable Resistor Mounting.
18	305P208	4	† Rectifier, Regulator (Control).
19	315A47	2	Reactor, Gate.
20	234B62	2	Retainer, Gate Reactor.
21	232A1361	2	Stud, Gate Reactor Mounting.
22	304A21	1	Resistor, Fixed - Alternator Field (200 Ohm, 50 Watt - 3/4" x 4").
23	304A15	2	Washer, Centering - Fixed Resistor Mounting.
24	332A604	1	Block, Terminal - 5 Place.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
25	332A678	1	Strip, Block Marker - 5 Place Block.
26	232A1051	4	Insulation, Gate Reactor to Mounting Bracket (1-1/4" x 1-5/8" x 1/8").
27	895-70	8	Insulation, Reactor Mounting (6) Gate Reactor to Retainer, (2) Voltage Control Reactor - SPECIFY SIZE REQUIRED.
28	232A1474	2	Spacer, Fixed Resistor to Stud (3/8" O.D. x 3/16" I.D. x 11/32" Long).
29	332A537	1	Block, Terminal - 4 Place.
30	332A686	1	Strip, Block Marker - 4 Place Block.

FIG. 21 - GENERATOR GROUP (Static Exciter Portion) Begin Spec "J" (Cont.)

NOTE: Cut-off switches and gauge sending units appear in figure 1. Overspeed switch appears with Generator Group.
 NOTE: This group applies to plants which use a 12-volt separate starter such as standard models.
 Use this group as a guide for other special models.

1	★	1	Panel Only, Lower - Begin Spec "F".
2	193B36	1	Gauge, Water Temperature - (Panel Unit only - Includes Clamp) - Prior to Spec "F" - 6 volt.
	193B106	1	Begin Spec "F" - 12 volt.
3	193B35	1	Gauge, Oil Pressure - (Panel Unit only - Includes Clamp) -
	193B88	1	For Spec "A", Spec "B" and Spec "C".
	193B107	1	For Spec "D" and Spec "E".
	193A41	2	Begin Spec "F".
5	302P60	1	Resistor - (1) Water Temperature Gauge, (1) Oil Pressure Gauge - Prior to Spec "F".
6	302A61	1	Ammeter, Charge (20-0-20).
6	307B4	1	Ammeter, Charge (30-0-30).
7	307B4	1	Relay, Stop - Prior to Spec "M".
7	304P32	1	Relay, Anti-Dieselling Control - Begin Spec "F".
8	304A192	1	Resistor - 15 ohm, 10 watt - off Stop Relay - Prior to Spec "N".
8	307B81	1	Resistor - 3 ohm, 10 watt - off Cranking Limiter - Begin Spec "M".
9	307B597	1	Relay, Start Ignition - Prior to Spec "M".
9			Relay, Start Ignition - Begin Spec "M".

* - Order by description, giving Model, Spec, and Serial Number (ONAN Nameplate).

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
10	322P49	1	Receptacle, Panel Light - For Housed Models only - Prior to Spec "M".
10A	322P72	2	Receptacle, Panel Light - Housed Models only - Begin Spec "M".
11	322-26	1	Bulb, Panel Light - For Housed Models only - Prior to Spec "M".
11	322-4	3	Bulb, (2) Panel Light, (1) Pilot Light - Begin Spec "M".
12	307B614	1	Relay, Emergency Stop - Specs "K" and "L".
12	307B299	1	Relay, Emergency Stop - Prior to Spec "K".
12A	307A655	1	Relay, Latch - Emergency Stop - Begin Spec "M".
13	308-90	1	Switch, Start-Stop - Use 308A166 Switch and Adapter Assembly.
13A	308P154	1	Switch, Start-Stop - Mounts in round hole - Prior to Spec "M".
13B	308A166	1	Switch, Start-Stop - Prior to Spec "M" - (Replaces 308-90).
14	301A974	1	Bracket, Start-Stop Switch Mounting - Use only with 308-90 Switch.
15	308-91	1	Switch, Emergency Stop Reset Button - Prior to Spec "M".
16	308P5	1	Switch, Hand Crank and Remote Start (Replaces 308-6) - Used only prior to 7/1/55 (approx.).
17	307B52	1	Relay, Start-Disconnect.
18	307A325	1	Relay, Time Delay - Used on Models with Low Oil Pressure Cut-off Switch - Used prior to 2/11/57.
18	307A388	1	Relay, Time Delay - Used on Models with Low Oil Pressure Cut-off Switch - Begin 2/11/57.
19	309B64	1	Switch, Low Oil Pressure Cut-off - (Mounts on Engine) - Optional Equipment - Replaces Switch used prior to Spec "F" with higher pressure break.
20	332A406	1	Block, Terminal - 3 Place - 2-11/16 x 1-1/16" - Used only on models with Low Oil Pressure Cut-off Switch, prior to Spec "F".
21	332A526	1	Strip, Marker - 3 Place - 2-21/32 x 1-1/2" - Marked 12, 13, 14 - Models with Low Oil Pressure Cut-off Switch only - Prior to Spec "F".
22	332A391	1	Block, Terminal - 4 Place - 3-7/32 x 1-1/16" - Prior to Spec "F".
22	332A537	1	Block, Terminal - 4 Place - Remote Operation Connection - Spec "F" through Spec "L".
22A	332A611	1	Block, Terminal - 3 Place - Remote Operation Connection - Begin Spec "M".
23	332A447	1	Strip, Marker - 4 Place - 3-7/32 x 1-1/2" - Model marked B+, 1, 2, 3 - Prior to Spec "F".
23	332A566	1	Strip, Marker - 4 Place - Marked B+, 1, 2, 3 - Spec "F" through Spec "L" - (Replaces 332A598).
23A	332A762	1	Strip, Marker - 3 Place - Marked Remote, B+, Ground - Begin Spec "M".
24	332A503	1	Block, Terminal - 8 Place - 5-15/32 x 1-1/16" - Prior to Spec "F".
25	332A510	1	Strip, Marker - 8 Place - 5-15/32 x 1-1/2" - Marked 4, 5, 6, 7, 8, 9, 10, 11 - Prior to Spec "F".
26	332A607	1	Block, Terminal - 12 Place - Begin Spec "F".
27	332A608	1	Strip, Marker - 12 Place - Marked 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 - Begin Spec "F".

FIG. 22 - LOWER CONTROL PANEL GROUP (Engine Instruments) Cont.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG. 22 - LOWER CONTROL PANEL GROUP (Engine Instruments) Cont.			
28	304-45	1	Resistor - 4 ohm, 50 watt - off Anti-Dieseling Solenoid Relay - Begin Spec "F".
29	304-292	1	Insulator - Resistor - Use with 304-45 Resistor - Begin Spec "F".
30	338C140	1	Harness Assembly, Wiring - Engine Control - Prior to Spec "F".
	338C201	1	Begin Spec "F".
31	308-2	1	Switch, Panel Lights - Begin Spec "M".
32	322P69	1	Receptacle, Pilot Light - Begin Spec "M".
33	308P138	1	Switch, Remote-Stop-Engine Run - Begin Spec "M".
34	320A104	1	Circuit Breaker, Cranking Limiter - Begin Spec "M".

FIG. 23 - UPPER CONTROL PANEL GROUP (AC Output)

NOTE: Voltage Regulator for plants Prior to Spec "J" appears in separate group.

NOTE: This group applies to plants which use a 12-volt separate starter such as standard models. Use this group as a guide for other special models (Control parts for housed plants also apply to unhoused plants with optional meter panel).

1	★ 301D1106	1	Panel only, Upper Box, Control - Prior to Spec "M".
2	301D2177	1	Box, Control - Begin Spec "M".
2	301B1124	1	Bracket, Control Box Mounting - Left Hand - Unhoused Models only.
3	301B1125	1	Bracket, Control Box Mounting - Right Hand - Unhoused Models only.
4	303P83	1	Rheostat and Switch, Field (Manual Operation) 300 ohm - Prior to Spec "J".
5	303-65	1	Rheostat, Regulator - 250 ohm, Model "H" - Prior to Spec "J".
6	303-32	2	Knob, Rheostat (1) Field Rheostat, (1) Regulator Rheostat - (Note: 1 only used Begin Spec "J").
7			Transformer, Current - Housed Models (Check TRANSFORMER Nameplate).
8			Prior to Spec "D".
	302B125	2	Single Phase Models - 140/5 Ratio
	302B78	3	120/208 Volt - 3 Phase Models - 100/5 Ratio.
	302B77	3	*120/240 Volt - 3 Phase Models - 80/5 Ratio.

★ - Order by description, giving Model, Spec and Serial Number (ONAN Nameplate).

*NOTE - Reference to 120, 240, 480 and 600 Volt also applies to 115, 230, 460 and 575 Volt.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
9	302A235	3	
10	302A236	3	
11	508P63	1	

FIG. 23 - UPPER CONTROL PANEL GROUP (AC Output) cont.

302B117	3	*480 Volt - 3 Phase Models - 50/5 Ratio.
302B123	3	*600 Volt - 3 Phase Models - 35/5 Ratio.
302B243	2	Single Phase Models - 140/5 Ratio - (Also Use on All X-ray Models).
302B78	3	120/208 Volt - 3 Phase Models - 100/5 Ratio.
302B244	3	*120/240 Volt - 3 Phase Models - 80/5 Ratio.
302B246	3	*480 Volt - 3 Phase Models - 50/5 Ratio.
302B255	3	*600 Volt - 3 Phase Models - 35/5 Ratio.
302B245	3	220/380 Volt - 3 Phase Models - 75/5 Ratio.
302B106	2	Spec "D" through "H" -
302B79	2	Single Phase Models - 60 Cycle Models - 200/5 Ratio.
302B125	3	Single Phase - 50 Cycle Models - 150/5 Ratio.
302B78	3	120/208 Volt - 3 Phase - 60 Cycle Models - 140/5 Ratio.
302B117	3	*120/240 Volt - 3 Phase - 60 Cycle Models, and 120/208, and 120/240 Volt - 3 Phase - 50 Cycle Models - 100/5 Ratio.
302B76	3	600 Volt - 3 Phase - 60 Cycle Models - 50/5 Ratio.
		*480 Volt, 220/380 Volt, and 277/480 Volt - 3 Phase - 60 Cycle Models, and 220/380 Volt - 3 Phase - 50 Cycle Models - 75/5 Ratio.
		Begin Spec "M" -
302B106	2	Single Phase - 60 Cycle Models - 200/5 Ratio.
302B79	2	Single Phase - 50 Cycle Models - 150/5 Ratio.
302B79	3	120/208 Volt - 3 Phase - 60 Cycle Models - 150/5 Ratio.
302B78	3	*120/240 Volt - 3 Phase - 60 Cycle Models, and 120/208 Volt, and 120/240 Volt - 3 Phase Cycle Models - 100/5 Ratio.
302B117	3	*600 Volt - 3 Phase - 60 Cycle Models - 50/5 Ratio.
302B76	3	*480 Volt, 220/380 Volt, and 277/480 Volt - 3 Phase - 60 Cycle Models, and 220/380 Volt - 3 Phase - 50 Cycle Models - 75/5 Ratio.
		Clamp, Current Transformer - Housed Models.
		Inside Half (Note: Quantity is 2 for Single Phase Models).
		Outside Half (Note: Quantity is 2 for Single Phase Models).
		Grommet, Rubber - 2-1/4" x 3-3/8" x 1/4" (For 2-3/4" Hole).

*NOTE - Reference to 120, 240, 480 and 600 Volt also applies to 115, 460 and 575 Volt.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION

FIG. 23 - UPPER CONTROL PANEL GROUP (AC Output) cont.

12	301B1136	1	Cover, Output Lead - Unhoused Models only - Prior to Spec "M".
13	332A391	1	Block, Terminal - 4 Place - Housed Models only Prior to Spec "J" (Also All X-ray Models).
14	332A524	1	Strip, Block Marker - Housed Models only Prior to Spec "J" (Also used on All X-ray Models).
15	332A513	1	Block, Terminal - Output.
16	332A406	1	Block, Terminal - 3 Place - Unhoused Models only Prior to Spec "J".
17	332A530	1	Strip, Block Marker - 3 Place - Unhoused Models only Prior to Spec "J".
18	302P421	1	Voltmeter, AC (Check VOLTMETER Scale and order according to reading) - Voltmeter Scale Reads 0-300 - (Replaces 302-41).
	302P422	1	Voltmeter Scale Reads 0-600 - (Replaces 302-42).
	302P488	1	Voltmeter Scale Reads 0-750 - (Replaces 302-150). Condenser, Output Terminal Suppression.
19	312A58	2	Single Phase Models - (Replaces 312A15).
	312A58	3	*120/208 Volt - 3 Phase Models - (Replaces 312A15).
	312A22	4	*120/240 Volt - 3 Phase Models (Housed) - Prior to Spec "J".
	312A58	4	*120/240 Volt - 3 Phase Models (Unhoused) - Prior to Spec "J" - (Replaces 312A15).
	312A58	4	*120/240 Volt - 3 Phase Models - Begin Spec "J".
	312A22	3	*480 Volt, 220/380 Volt, and 277/480 Volt, and 277/480 Volt - 3 Phase Models (Housed) - Prior to Spec "M".
	312A22	4	277/480 Volt - 3 Phase Models (Unhoused) - Begin Spec "M".
20	302-157	1	Multplier, Meter (Resistor).
	302-163	1	*480 Volt and 220/380 Volt - 3 Phase Models - Used on Old Type Round-Faced Meter.
			*600 Volt - 3 Phase Models - Used on Old Type Round-Faced Meter.
21	315B20	1	Transformer, Potential - Adapts Voltage Regulator - Prior to Spec "J".
	315B21	1	*480 Volt - 3 Phase Models (460-230 Volt).
	315B23	1	220/380 Volt - 3 Phase Models (380-220 Volt).
			*600 Volt - 3 Phase Models (575-230 Volt).
22	302-406	1	Ammeter, Ac (Check AMMETER Scale and select according to reading).
	302-407	1	Ammeter Scale Reads 0-75 (Replaces 302-9).
	302-408	1	Ammeter Scale Reads 0-80 (Replaces 302-10).
	302-411	1	Ammeter Scale Reads 0-100 (Replaces 302-11).
	302-405	1	Ammeter Scale Reads 0-200 (Replaces 302-13).
			Ammeter Scale Reads 0-50 (Replaces 302-116).

*NOTE - Reference to 120, 240, 480 and 600 Volt also applies to 115, 230, 460 and 575 Volt.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
23	302P404	1	Ammeter Scale Reads 0-30 (Replaces 302-124).
	302P409	1	Ammeter Scale Reads 0-140 (Replaces 302-126).
	302P409	2	*Ammeter Scale Reads 0-140 (X-ray Models Only).
24	304A74	1	Resistor Only, Globar Field Discharge - Housed Models - Prior to Spec "J".
	304B97	1	Resistor Assembly, Globar Field Discharge - Includes Bracket and Hardware - Housed Models - Prior to Spec "J".
25			Breaker, Circuit - Used on Housed Models only Prior to Spec "J" / Prior to Spec "D" - Housed Models.
	320P55	1	Single Phase Models (2 Pole Westinghouse De-Ion).
	320P54	1	Three Phase Models (3 Pole Westinghouse De-Ion).
	320B96	1	Spec "D" Through "H" - Housed Models - Single Phase Models (2 Pole Heineman).
	320B97	1	Three Phase Models (3 Pole Heineman).
26	320B17	1	Begin Spec "J" - All Models -(Housed or Unhoused).
	302B212	1	Meter, Running Time - Optional on Unhoused Models - 60 Cycle Models - Prior to Spec "M" - (Replaces 302B68).
	302P465	1	*120/240 Volt - 1 Phase, and 120/208 Volt, 120/240 Volt and 600 Volt - 3 Phase
	302P466	1	220/380 Volt - 3 Phase.
	302P467	1	*480 Volt, and 277/480 Volt - 3 Phase.
	302-102	1	50 Cycle Models - Prior to Spec "M".
	302P468	1	50 Cycle Models - Begin Spec "M" - *120/240 Volt - 1 Phase, and 120/208 Volt, 120/240 Volt, and 600 Volt - 3 Phase.
	302P469	1	220/380 Volt - 3 Phase.
	302P470	1	*480 Volt, and 277/480 Volt - 3 Phase.
27	308B22	1	Switch, Voltage and Current Selector - 3 Phase Housed Models.
28	301A413	4	Spacer, Selector Switch Mounting - 5/16 x 3/4" - Brass - 3 Phase Housed Models.
29	308A165	1	Switch and Plate, Remote Control Start-Stop (Replaces 308A94).

FIG. 23 - UPPER CONTROL PANEL GROUP (AC Output) cont.

Ammeter Scale Reads 0-30 (Replaces 302-124).
 Ammeter Scale Reads 0-140 (Replaces 302-126).
 *Ammeter Scale Reads 0-140 (X-ray Models Only).
 Resistor Only, Globar Field Discharge - Housed Models - Prior to Spec "J".
 Resistor Assembly, Globar Field Discharge - Includes Bracket and Hardware - Housed Models - Prior to Spec "J".
 Breaker, Circuit - Used on Housed Models only Prior to Spec "J" / Prior to Spec "D" - Housed Models.
 Single Phase Models (2 Pole Westinghouse De-Ion).
 Three Phase Models (3 Pole Westinghouse De-Ion).
 Spec "D" Through "H" - Housed Models - Single Phase Models (2 Pole Heineman).
 Three Phase Models (3 Pole Heineman).
 Begin Spec "J" - All Models -(Housed or Unhoused).
 Meter, Running Time - Optional on Unhoused Models - 60 Cycle Models - Prior to Spec "M" - (Replaces 302B68).
 *120/240 Volt - 1 Phase, and 120/208 Volt, 120/240 Volt and 600 Volt - 3 Phase
 220/380 Volt - 3 Phase.
 *480 Volt, and 277/480 Volt - 3 Phase.
 50 Cycle Models - Prior to Spec "M".
 50 Cycle Models - Begin Spec "M" - *120/240 Volt - 1 Phase, and 120/208 Volt, 120/240 Volt, and 600 Volt - 3 Phase.
 220/380 Volt - 3 Phase.
 *480 Volt, and 277/480 Volt - 3 Phase.
 Switch, Voltage and Current Selector - 3 Phase Housed Models.
 Spacer, Selector Switch Mounting - 5/16 x 3/4" - Brass - 3 Phase Housed Models.
 Switch and Plate, Remote Control Start-Stop (Replaces 308A94).

*NOTE - Reference to 120, 240, 480, and 600 Volt also applies to 115, 230, 460 and 575 Volt.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 23 - UPPER CONTROL PANEL GROUP (AC Output) Cont.

30	304A125	1	Resistor, Running Time Meter - Housed Models - *480 Volt - 3 Phase Models - Prior to Spec "M" - (Use with 302B212 or 302-102 Meter).
	304A99	1	220/380 Volt - 3 Phase Models - Prior to Spec "M" - (Use with 302B212 or 302-102 Meter).
	304-134	1	*600 Volt - 3 Phase Models - Prior to Spec "M" - (Use with 302B212 or 302-102 Meter).
	304A536	1	*600 Volt - 3 Phase Models - Begin Spec "M" - (Use with 302P465 Meter).
31	303-97	1	Rheostat, Voltage Regulator - 75 ohm Model "H" - Begin Spec "J".
31	303-31	1	Rheostat, Voltage Regulator - 300 ohm Model "K" (For X-ray only).
32	304A479	1	Resistor, Fixed - Rheostat (425 ohm, 50 watt - 3/4"x 4") - Begin Spec "J"/
33	332A604	1	Block, Terminal - 5 Place - Exciter Connections - Begin Spec "J".
34	332A689	1	Strip, Block Marker - 5 Place.
	332A690	1	*120/240 Volt - Single or 3 Phase Models, and 120/208 Volt - 3 Phase Models.
	35	1	*480 Volt, 600 Volt, and 220/380 Volt - 3 Phase Models.
36	402-70	4	Bracket, Panel Stop.
37	337A44	1	Mounts, Rubber.
			Strap, Ground.
			NOTE: Reference to 120, 240, 480, and 600 Volt also applies to 115, 230, 460, and 575 Volt.

FIG. 24 - HOUSING GROUP

(NOTE: Parts in this group are used on Housed Models only except where Unhoused is specified)

1	403D331	1	Chassis, Mounting - Front Section - Housed or Unhoused Models.
2	403D332	1	Chassis, Mounting - Rear Section.
3	403A373	1	Plate, Chassis - 9-1/2" x 9" - For Mounting load wire conduit.
4	405B930	1	Panel, Housing Side - Right.
5	405B931	1	Panel, Housing Side - Left.
6	405C934	2	Panel, Door.
7	406A105	4	Clamp, Door.
8	405D928	1	Panel, Rear Housing.
9	405B932	1	Door, Rear Panel.
10	406-2	1	Knob, Door.
11	870-106	6	Nut, Tinnerman Speed (Panel to Radiator Front Side) Unhoused Models only).
11	870-106	4	Nut, Tinnerman Speed - Mounts Door to Panel.
11	870-113	10	Nut, Tinnerman Speed Grip (6) Radiator to Panel, (4) Edging - Unhoused Models only).

PARTS LIST

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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FIG. 24 - HOUSING GROUP cont.

11	870-113	14	Nut, Tinnerman Speed.
12	405D929	1	Panel, Top Housing.
13	405D927	1	Panel, Front Housing - Housed or Unhoused Models - Appears also in radiator group.
14	416B338	1	Frame, Battery Hold Down - Housed or Unhoused Models.
15	520A231	2	Stud, Battery Hold Down - Housed or Unhoused Models.
16	416B358	1	Tray, Battery Support - Housed or Unhoused Models.
17	336A476	1	Lead, Ground - Plant to Chassis - Housed or Unhoused Models.
18	159D489	1	Strap, Fuel Tank.
19	405C964	1	Extension, Radiator Hood - Unhoused Models only.
20	403C374	1	Edging, Chassis - Right Hand - Unhoused Models only.
21	403C375	1	Edging, Chassis - Left Hand - Unhoused Models only.
	406A88	1	Clip, Door Latching.

FIG. 25 - CARBURETOR AIR HEATER GROUP (X-RAY MODELS ONLY)

	133A98	1	Heater Package Consisting of Following Parts.
	133C101	1	Duct, Carburetor Air Heater.
1	133C102	1	Duct, Carburetor Air Heater Intake.
2	133C92	1	Duct, Carburetor Heat - Muffler End.
3	503-71	1	Hose - 2-1/4" x 17-1/4".
4	503-44	2	Clamp, Hose - 2-3/8" x 5/8".
5			

MISCELLANEOUS

NOTE: Gasket kits and repair kits appear in the respective group with the part in question.

333P54	Heater, Water Jacket - Plumbing available upon request - (Optional Equipment, Begin November 1958).
333P46	Heater, Headbolt - Mounts in 3rd stud from rear, carburetor side - (Optional Equipment Prior November 1958).
309-20	Thermostat - Used with Headbolt Heater (Optional Equipment).
333A12	Cover, Thermostat - Used with Headbolt Heater (Optional Equipment).
333A13	Box, Thermostat - Used with Headbolt Heater (Optional Equipment).
133A98	Heater Package, Carburetor Air - (Optional Equipment) - Describe part if ordering component.

REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
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MISCELLANEOUS cont.

179C165 Cooling Package, City Water - (Optional Equipment) - Includes Water Cooled Manifold, Solenoid Valve, Manual Valves and Connections complete - Describe part if ordering component - Replaces 179C15.
522K157 Overhaul Kit.

Paint, Touch-up Enamel - Pressurized Can.
525P90 Mouse Grey, 12-Ounce Can.
525P137 Green, 16-Ounce Can.

NOTE: Gasket kits and repair kits appear in the respective group with the part in question.

